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WORLD'S LEADING PHOTOGRAPHIC MAGAZINE

APRIL, 1955
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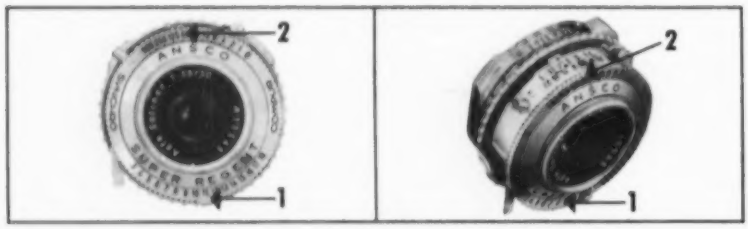

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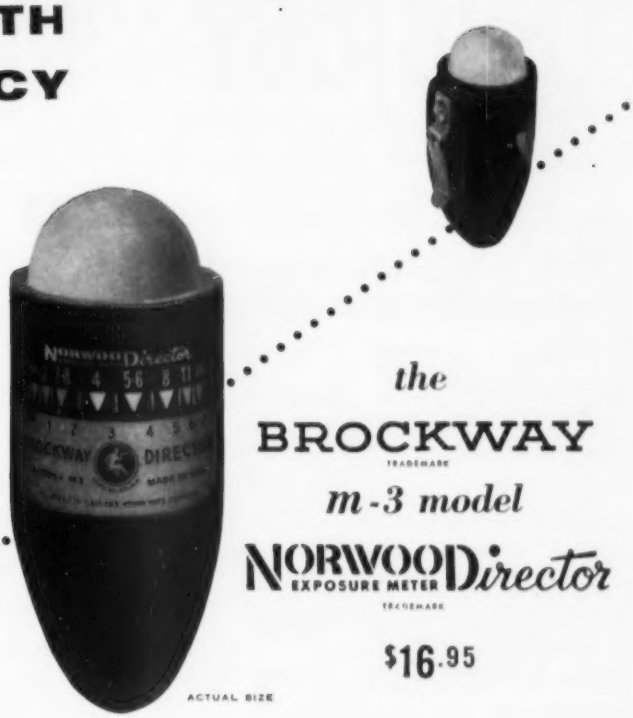

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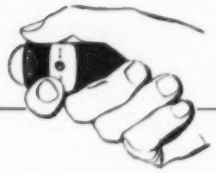

2

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3

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APRIL 1955

VOLUME 36, NUMBER 4

POPULAR PHOTOGRAPHY®

including CAMERA and AMERICAN PHOTOGRAPHY

WORLD'S LEADING PHOTOGRAPHIC MAGAZINE

Our April cover photograph was made by Jon Abbot, a professional from New York City. He used an 8 x 10-in. Eastman all-metal view camera, and a 14-in. Ektar f/6.3 lens. The film was Daylight Ektachrome; using three Ascor electronic flash units and a CC10y filter over the lens to balance the response of the film to the color temperature of the lights, the exposure was made at f/11. The model was Joan Paul.

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Kodak Signet, f3.5, sync	45.00	2¼x2¼ H&J, f4.5 CRF, Solenoid	73.50	500 w Goble Master, blower	49.00
Kodak Retina IIa, f2, Sync	84.00	2¼x3¼ Pace Speed Graphic, f4.5, CRF	159.50	500 w La Belle 75, case, blower	97.50
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16mm x 50' Super X

12 rolls—$4.95. 29 roll can—$8.95. 2 cans $17.00. (12 rolls 2 lbs.—1 can 5 lbs.)

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16mm x 400' Proj. Reels and cans 69¢ set— 3 sets $1.79

16 x 100' Cam. Spools & cans.....$2 for $3.50

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100 Sheets.....$2.98

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9 for $5.50

10 for $10.00

(Shp. Wgt. 1 lb. each)

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Kodabromide 7" x 85½" SW Glossy—F2—'53 date. Box of 100 sheets $1.95.....3 boxes $5.00

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letters to the editor

Is Light Necessary?

Recently on an assignment to cover a theatrical dance program, I needed to get some pictures of the audience—and an

. . . an unusual situation

unusual situation presented itself:

The only light on the audience came from the stage—and I couldn't use flash because it would disturb the spectators.

The subjects could not be seen in the rangefinder.

My light meter gave no reading.

I used Tri-X film, exposed for 1 second at *f*/2, and then developed in Normadol replenisher for one hour, by inspection. Toward the end of the hour I heated the developer to 90 F to increase activity.

The resulting print (see above) is, of course, of minimum quality—but it does show that an "impossible" assignment *can* be solved—the hard way.

Nat Finkelstein
Brooklyn, N. Y.

It's Coming

As a recent convert to amateur photography, I have been buying and comparing the various photography magazines. There is no question that POPULAR is the best, and I shall soon subscribe.

The article *Revolution in Black and White* was excellent, and *Your Color Film Is Versatile* very helpful.

However, we are all looking forward to the new Ektachrome in 35-mm size, as advertised recently in a local newspaper, and there was no information on this in your February issue.

Leon Horowitz, M.D.
New York, N. Y.

• *The new Ektachrome was not released in time for the results of our exhaustive tests to be run in the current issue—but see the next (May) issue for a full report.*—ED.

A Hundred Years of . . .

In looking over my back issues I came on something interesting under *Candid Shots* for March 1953. A column entitled *A Century of Animal-Eye Pictures* tells of a man named John Benjamin Dancer who made photographs through animals' eyes in 1839, and in 1852 designed a stereo camera. The closing sentence of the item was "Next we'll be hearing that electronic flash is a hundred years old!"

You are so right. I quote from Aaron Sussmann's *The Amateur Photographer's Handbook*, published by Thomas Y. Crowell Co. Page six: "Talbot was an ingenious experimenter . . . the first to try high-speed or stroboscopic photography. In *1851* he attached a copy of the London *Times* to a whirring wheel upon which he had focused his camera. He loaded the camera, darkened the room, opened the shutter, and flashed a brilliant high-voltage electric spark. This photograph stopped the motion of the wheel and made it possible to read clearly every word of the newspaper."

Arthur Yaseen
Chicago, Ill.

Two Questions

As a regular reader I would like to ask the following questions regarding the February issue:

1) Why do you tell your readers Tri-X has a rating of ASA 650 when Eastman rates it at 200?

2) If you have such a deluge of color slides submitted by readers, why reproduce those of such poor quality and pictorial interest? What is there beautiful about a glass of liquor against the sunset or a couple of legs propped up against a rock—unless you're advertising liquor or hosiery? . . . Your readers are not interested solely in bizarre pictures.

Fred Heryer
Kansas City, Mo.

• *1) See the Eastman Kodak advertisement in our March issue, page 90. 2) We always try to select pictures which represent the various tastes which our readers show when they send in pictures. In the February issue we have represented a variety of tastes in three pages. And somewhere there are readers who think both liquor and legs are beautiful.*—ED.

Ultra-Violet Further Defined

In the *Tools and Techniques* column in the January issue Mr. Lipton wrote a very interesting review of the Englishman Thompson's article, *Ultra-Violet, Lenses, and Colour Film*. But the statements ". . . the fact that camera lenses transmit U-V . . ." and ". . . the common belief that ordinary window-glass is supposed to 'stop' ultra-violet radiations . . ." appear as somewhat of a contradiction. There is none.

The visible light range of the spectrum begins with radiations 400 millimicrons long (the color blue-violet); the U-V range lies below that. The person who wants a suntan is concerned with U-V of relatively *short* wavelengths—only this area of the spectrum is physiologically active and this, indeed, is stopped by window glass or a camera lens. On the other hand, color film is sensitive to *all* U-V;

B & J-"BUY-OF-THE-MONTH"

most glass transmits U-V of relatively *long* wavelengths quite well, and it is

That "Gee Whiz" expression was caught by Andre de Dienes with a Sylvania Press 25 at f/8 and 1/100

"You mean Sylvania's giving this Pocket Album... *FREE!*"

Yes . . . and it's *yours* when you send in the coupons from two packs of Sylvania Press 25 Blue Dots. Plastic pockets hold nine of your most treasured pictures. Keep them clean, fresh, always neat! Two side pockets for identification cards and other papers. Sylvania Blue Dots are designed and manufactured with an extra margin of care and precision that make them the "quality bulb."

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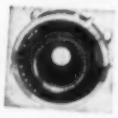

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most glass transmits U-V of relatively *long* wavelengths quite well, and it is this that produces the U-V effect on color film.

In spectrograms I have made, using a Retina II camera and the appropriate optical devices, U-V down to a wavelength of about 360 millimicrons registered very well—below that it was blocked completely.

Klaus Patau
Madison, Wis.

Where Can I Get It?

Your feature article on black-and-white 35-mm techniques was very interesting but in my case somewhat frustrating, since the new Tri-X film you have heralded in the last two issues is not generally available to John Q. Public. You have also classed Promicrol as an extremely good developer for "pushing" film speed, but this too is unavailable locally and the two New York houses I contacted had never heard of the product.

It would be greatly appreciated if you would give sources for the less common products extolled in your articles, so we poor backwater photographers can try out the techniques you describe.

John Richardson
Oceanport, N. J.

• *As far as Tri-X goes, Eastman Kodak's supply simply did not last because the demand was so much greater than was expected; production will soon catch up, we hear, and all parts of the country will be amply supplied. Promicrol, however, has been and is available nearly everywhere. If you cannot purchase it locally, write to George Murphy, Inc., 57 East 9th Street, New York, N. Y.*—Ed.

To Reverse Or Not To . . .?

In glancing through my February issue I was struck by the massive form of El Capitan facing the wrong way (page 37, *Pictures From Our Readers*). Many pictures do look better when shown in reverse, but I believe it is a mistake to do so with such nationally known scenes as this one in Yosemite National Park.

Robert Zink
Park Ranger
Arco, Ida.

• *Yes, you're right.*—Ed.

The Nose Has It

In the article *Pool-Side Camera* in the January issue, one of the captions states that backstroker Bob MacLennan is exhaling through his mouth. It is an accepted fact that a good swimmer exhales through his *nose*. I am glad to say that in the picture MacLennan *is* exhaling through his nose.

James LaFarge
Springfield, Mass.

• *Our caption writer's sinus must have been acting up again.*—Ed.

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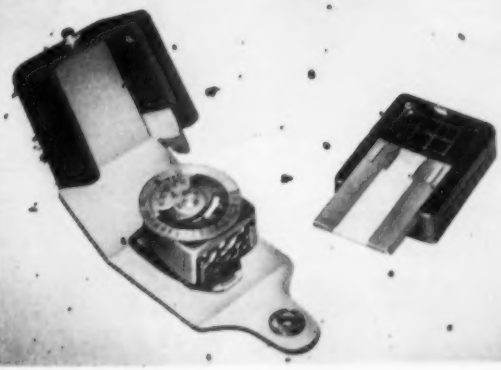

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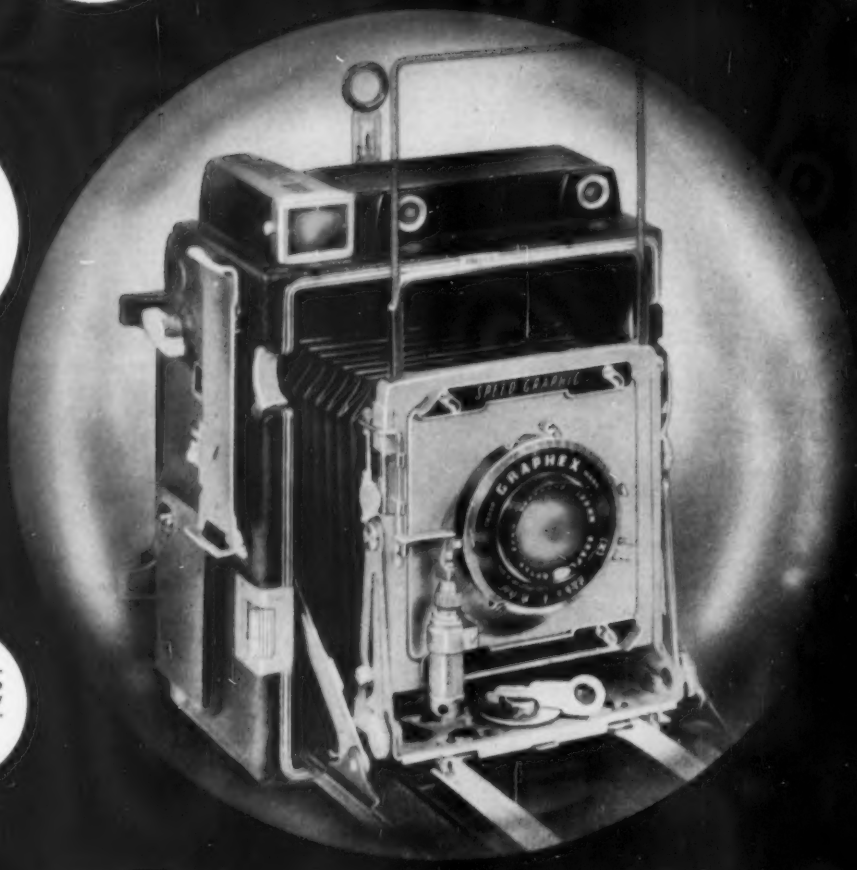

Rangefinder focusing accurate from 4 ft. to infinity with 127-135mm. lenses.

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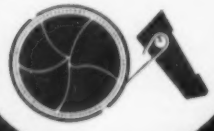

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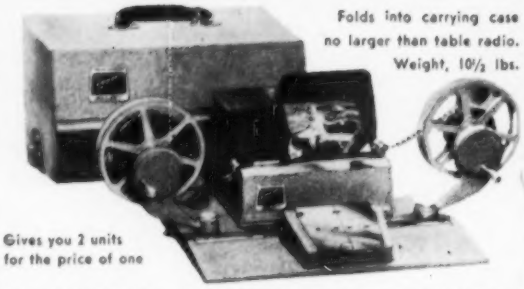

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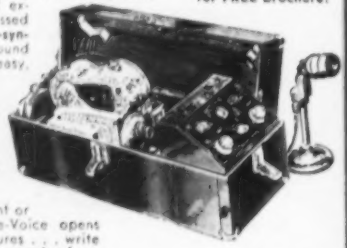

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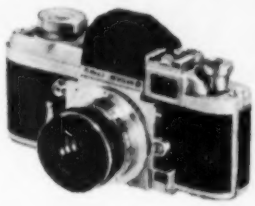

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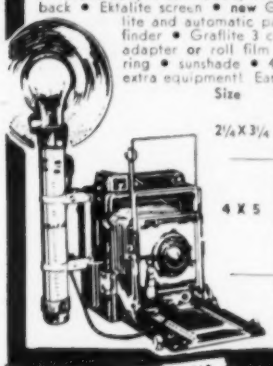

Size	Coated Lens in Shutter	Speed Graphic	Crown Graphic
2¼ X 3¼	101mm Ektar f/4.5 (1/800 sec.)	$308.	$273.
	105mm Tessar f/3.5	323.	279.
	105mm Ektar f/3.7	312.	268.
4 X 5	135mm Schneider Xenar f/4.7	307.	265.
	135mm Optar f/4.7	322.	278.
	127mm Ektar f/4.7	322.	278.
	135mm Tessar f/4.5	337.	297.
	150mm Tessar f/4.5	347.	304.
	152mm Ektar f/4.5	338.	298.
	135mm Schneider Xenar f/3.8	353.	313.
	150mm Tessar f/3.5	408.	364.

Famous brand wide angle f/6.8 coated lens in 1/300th sec. synch' shutter also available with our outfits for just $12!

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Leica M-3 w/ Elmar coated f/3.5 lens $348. Cash or $34.80 Down
Leica M-3 w/ Summicron coated f/2.0 lens 447. Cash or 44.70 Down
Leica M-3 w/ Summarit coated f/1.5 lens 468. Cash or 46.80 Down

LEICA M-3 ACCESSORIES

Summaron-M coated 35mm f/3.5 lens	$ 99.00 Cash or	$ 9.90 Down
Elmar-M coated 90mm f/4.0 lens (standard mt.)	93.00 Cash or	9.30 Down
Elmar-M coated 90mm f/4.0 lens (collapsible)	150.00 Cash or	15.00 Down
Hektor-M coated 135mm f/4.5 lens	141.00 Cash or	14.00 Down
Leica Meter-M	30.00 Cash or	3.00 Down
Eveready Case for M-3 with meter attached	15.00 Cash or	1.50 Down

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Leica IIf with Summaron coated f/3.5 lens	216.00 Cash or	21.60 Down
Leica IIIf with Elmar coated f/3.5 lens	237.00 Cash or	23.70 Down
Leica IIIf with Summaron coated f/3.5 lens	276.00 Cash or	27.60 Down
Leica IIIf with Summicron coated f/2.0 lens	336.00 Cash or	33.60 Down
Leica IIIf with Summarit coated f/1.5 lens	357.00 Cash or	35.70 Down

NEW 1955 AUTOMATIC Exakta VX

With FULLY AUTOMATIC DIAPHRAGM lens listed: Westanar f/2.8 $239.50 Cash or $23.95 Down; Westagon f/2.0 $279.50 Cash or $27.95 Down; Biotar f/2.0 $345. Cash or $34.50 Down; or Xenon f/1.9 $341.70 Cash or $34.17 Down. With Pentaprism R/F add $47. Cash or $4.70 Down.

1955 CONTAX IIA and IIIA

New full synchro models! IIA with Sonnar coated f/2.0 lens $345. Cash or $34.50 Down; or with Sonnar coated f/1.5 lens $374. Cash or $37.40 Down. For Contax IIIA with built-in exposure meter add $38. Cash or $3.80 Down.

ALL NEW 1955 RETINA IIIc

Built-in exposure meter and with normal Xenon coated f/2.0 lens in M-X shutter — $185. Cash or $18.50 Down. Optional: Curtar 35mm coated f/5.6 W/A lens $42.50 Cash or $6.25 Down; Longar 80mm coated f/4.0 telephoto lens $82.50 Cash or $8.25 Down.

1955 ZEISS Contasex 35

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new 1955 ZEISS CONTAFLEX

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1955 Linhof Super Technika Cameras

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1955 ELECTRONIC FLASH UNITS

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1955 POLAROID Land Cameras

Just out! Sensational NEW Polaroid Highlander $69.95 Cash or $6.95 Down. Also: Speedliner $89.75 Cash or $8.97 Down. Deluxe Pathfinder with coupled rangefinder $249.50 Cash or $24.95 Down.

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NEW Models! 1955 Rolleis

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1955 Revere Balanced-Tone TAPE RECORDERS

Model T-100 $169.50 Cash or $16.95 Down; T-500 $179.50 Cash or $17.95 Down; deluxe push-button T-700 $225. Cash or $22.50 Down; TR-800 (like T-700 plus built-in radio) $277.50 Cash or $27.75 Down. T-100 gives 1 hr. recording time; all others — 2 hrs.

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Operates by itself! You sit apart from the projector and enjoy the show! Complete with Wollensak 5" f/3.5 lens, 500 watt lamp and case $119.50 Cash or $11.95 Down.

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Retina IA, ctd. Xenar 3.5, MX, l. n.	49.50
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Sterro Realist, ctd. 3.5, Synchro, like new	67.50
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Minox III-S, ctd. 3.5, Synchro, l.n., Case, Ch.	109.50
Vitessa, ctd. Ultron F.2, MX, l. n.	119.50
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Same, with new case, Flashgun and viewer	149.50
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Leica Standard, Elmar 3.5, like new	$ 45.00
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Same, Summar F.2, like new	99.50
Leica III C, coated Summitar F.2, like new	129.50
Same, coated Summicron F.2, like new	179.50
Same, coated Summarit 1.5, like new	189.50
Leica III F, coated Summitar F.2, like new	149.50
Same, coated Summicron F.2, like new	199.50
Same, coated Summarit 1.5, like new	209.50
For "Red Dial" Leica III F add $	10.00
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Canon IV-S-2, ctd. Serenar 1.8, Synch., l. n.	179.50
Nicca II, coated Summitar or Nikkor F.2, l. n.	99.50
Nicca III-S, ctd. Summit or Nikkor F.2, l. n.	149.50
Same, coated Nikkor 1.4, like new	179.50
Ctd. Summaron 3.5, 35mm, chrome, like new	64.50
Ctd. Serenar 2.8, 35mm, chrome, like new	69.50
Ctd. Elmar 3.5, 50mm, chrome, like new	38.50
Ctd. Summitar F.2, 50mm, chrome, like new	89.50
Ctd. Summicron F.2, 50mm, chrome, l. n.	109.50
Ctd. Nikkor 1.4, 50mm, chrome, like new	119.00
Ctd. Summarit 1.5, 50mm, chrome, like new	119.50
Ctd. Serenar 1.9, 85mm, chrome, like new	95.00
Ctd. Elmar F.4, 90mm, chrome, like new	32.50
Ctd. Serenar F.4, 135mm, chrome, like new	69.50
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Leitz Imarect, l.n. $26.50; Tewe "Zoom," New	36.50
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T-ctd. Tessar 4.5, 40mm f. Contax D, NEW	49.50
T-ctd. Biotar 1.5, 75mm f. Contax D, l. n.	105.00
T-ctd. Sonnar F.2, 85mm, Ilwt., like new	109.50
Ctd. Tele-Kilar 3.5, 150mm f. Contax D, l. n.	79.50

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Exakta B, Tess. 2.8, Synchro, Sciff., like new	59.50
Ikoflex IA, T-ctd. Tess. 3.5, Synchro, l. n.	59.50
Rolleicord III, ctd. Xenar 3.5, Synchro, l. n.	74.50
Rolleicord IV, ctd. Xen. 3.5, MX, NEW	87.50
Auto-Rollei, ctd. Tes. 3.5, Heil. Seiten., l. n.	92.50
Same, T-ctd. Tessar 3.5, MX Synchro, l. n.	149.50
Same, coated Xenar 3.5, X Synchro, like new	115.00
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tools and techniques

by Norman C. Lipton

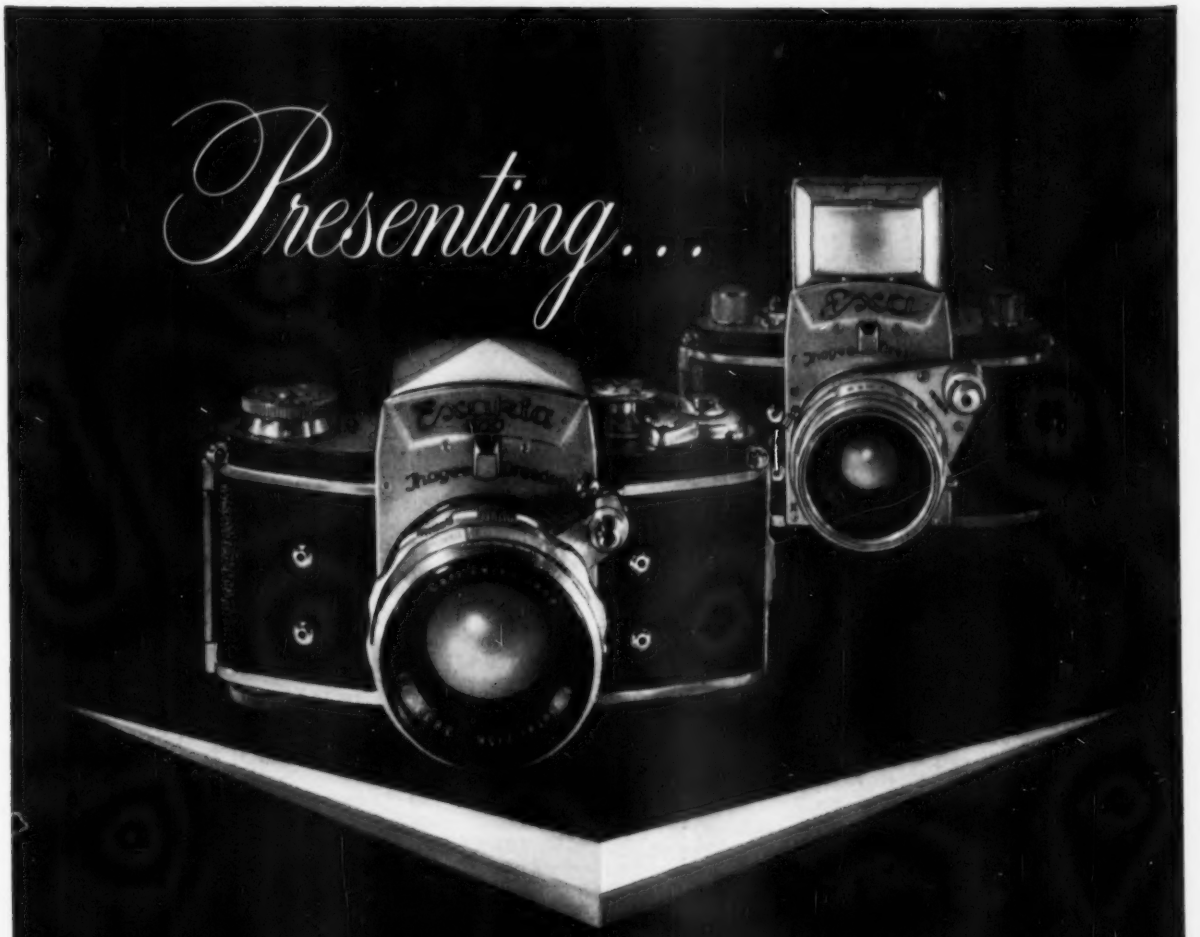
A round-up of recent developments and significant trends

Haloid Variable-Contrast Paper. First of the several licensees of Du Pont's variable-contrast paper (Varigam) patents to announce a product of this type was the Haloid Company, Rochester 3, N. Y., whose Varaloid paper price list appeared on November 1, 1954. (News of the licensing appeared in the August 1954 instalment of T&T.) Since Haloid's photographic products are generally sold direct to large-scale consumers through the company's sales representatives, news of Varaloid was slow reaching trade-news sources. According to the brochure now in our hands, Varaloid is available in a fast emulsion and a regular emulsion, the latter being about ⅓ the speed of the former and therefore suitable for contact as well as projection printing. The image tone is blue-black, and the same graded printing filters, ranging from a No. 1 yellow to a No. 10 blue, as are used for printing Du Pont Varigam papers, are used with Varaloid. Six paper surfaces are offered in both types. Typical of the price structure is the listing of 8 x 10 single weight at $7.20 for a package of 100.

Japanese Camera Marketing. The determination of the Japanese camera manufacturing industry to capitalize on their beachhead in the American market established by Nippon Kogaku Kogyo (Nikon cameras, Nikkor lenses, and Mikron binoculars) five years ago has been underscored by two recent developments. Last October 19 through November 6, six importers of Japanese cameras and related optical instruments staged a cooperative equipment exhibit and amateur picture-making contest at the premises of the Japan Trade Center situated on 5th Avenue in the heart of New York City. The attractive show, which was open to the public at large, drew thousands of walk-in visitors, and the winner of the photography contest was awarded an all-expense round trip to Japan, for two. (The original plan, which had been developed on short notice, had called for the participation of 20 Japanese photographic concerns.) Shortly afterward, an advertisement appeared on page 93 of the January 1955 issue of PHOTOGRAPHY magazine explaining an inspection plan whereby the Japanese government has, since August 1, 1954, been regulating the quality standards of all photographic equipment intended for export from that country. All such equipment is tagged with an emblem reading "Passed—Japan Camera Inspection Institute," with the serial number of the equipment and date of inspection inscribed on the back of the tag. This is an obvious effort to assure the American public that the reputation for consistency established by Nippon Kogaku's rigid factory-inspection system applied to the entire Japanese camera industry and was not restricted to a single representative. . . . And now comes news of a brand-new model of the Nikon camera described at length in last month's issue. This development highlights the skill with which N. K.'s designers have revamped the basic design of their original camera (admittedly a derivation of the prewar Contax II) to meet the needs of professional picture makers. We, the consumer public, seem to be entering an era of intense, rewarding competition where quality and utility are the major considerations.

New Rolleicord (Model V). Thanks to keen competition in the twin-lens reflex camera field (largely due to the influx of many fine models from Japan), recent models of Franke & Heidecke's Rolleicord have been invested with all but the most exclusive automatic feature of its professional big brother, the Rolleiflex (at savings up to $100). The Rolleicord V which became available throughout the nation on February 1st of this year continues the trend. This new model incorporates the new Synchro-Compur M-X shutter which has a Light Value Scale and coupled shutter speed and lens diaphragm controls to simplify exposure adjustments—a feature introduced in the Rolleiflex in mid-1954. In addition, it features locking flash connections (instead of push-in); an oversize focusing knob (though slightly smaller than that of the Rolleiflex); a self-timing mechanism (for the first time on the Rolleicord); an improved safety lock for the camera back which can be pushed back manually; baffled interior to eliminate internal light reflections; tapered spool knobs, and an improved lever device for by-passing the double-exposure prevention lock. The absence of an automatic feeler mechanism to position the film for the first exposure and of a crank to advance the film and cock the shutter for each succeeding exposure continues to differentiate the Rolleicord from the 'Flex. Nevertheless, the Rolleicord has an automatic interlocking film-advance and cocking mechanism operated by a large knob, and it is equipped with the same 75-mm Schneider Xenar $f/3.5$ lens that has made such creditable showing on recent models of the $f/3.5$ Rolleiflex. Like the Rolleicord IV, the improved Model V lists at $135.55 with an additional $14.95 for the ready case.

Ektachrome "F" in Daylight. Credit Enteco Industries, Inc., of Brooklyn, a fast moving independent filter manufacturer, with being the first to announce (on January 10) a conversion filter permitting Kodak's new 35-mm Ektachrome Type F film (balanced for clear flashbulbs—approx. 3800 K) to be exposed in daylight. Name of the new filter is Enteco 85C. It matches the characteristics of the Kodak Daylight Filter for Kodak Type F Color Films (No. 85C) whose



an event in Exakta history!

The Automatic Exakta VX with the latest creation by Carl Zeiss — the New glamorous f/2.0, Biotar 58-mm. lens with Automatic Diaphragm! This is another milestone in the uninterrupted progress of Exakta technique since this famous camera was designed two decades ago. The Automatic Exakta VX with Penta Prism eye-level viewfinder and Split image Rangefinder and 58-mm., f/2.0 Automatic Zeiss Biotar Lens is priced at $392. Also available with waist-level finder. • The Automatic Exa has most of the advantages of 35-mm., automatic, single-lens, reflex photography in a camera foolproof enough for a child to use. The Automatic Exa is equipped with the 50-mm., f/2.8 Automatic Isco Westanar Lens. Automatic Exa with Isco Westanar f/2.8, 50-mm., Lens is priced at $129.50. Automatic Exa with Isco Westanar f/2.8, 50-mm., lens and Penta Prism, $159.50. Automatic Isco Westanar alone, $69.50. • Should you choose to make one of these cameras yours — you will have this assurance: In any company of cameras whether foreign or domestic, there is nothing to challenge the distinction of an Exakta or Exa.

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deliveries were scheduled to begin late in January, according to the January 1955 issue of the *Kodak Dealer Bulletin*. The effective film speed of Ektachrome Type F exposed by daylight with the 85C filter is 20, which should be compared with a speed of 32 for 35-mm Ektachrome Daylight Type exposed by daylight, and 16 for 35-mm Ektachrome Type F exposed by photoflood illumination with a Kodak Wratten 82A filter.

Improved View-Master System. Stereo pairs made with the View-Master Personal camera and mounted in Sawyer's popular View-Master reels can now be seen in almost full life-size dimensions with the new View-Master Focusing Viewer, Model D, introduced last October. The focusing unit, priced at $9.75, can be illuminated by power from its own batteries or with household ac when attached to a $3.50 plug-in transformer that by-passes the light switch. The new unit supplements the inexpensive fixed-focus View-Master, which presents the reel-mounted stereo pairs in reduced proportions and which, heretofore, had been an inherent limitation of the Sawyer stereo-camera system.

Hauman's New Speedlight. The quiet debut of the Hico-Lite 228 Electronic Flash Unit (a 230 watt-sec dry-battery outfit with a 6-pound powerpack) which was duly noted in our *What's New* department last month represents still another important step in the maturation of speedlight as an everyday lighting tool. A masterpiece of practical compromise, the new "228" unit appears at first glance to be the dream incarnate of a working photographer who had spent many anguished hours cataloguing the limitations of existing equipment. It turned out after due investigation to have been inspired by a brain trust of pros enlisted by Hauman Instruments Co. Inc. of Watertown, Mass., who manufacture the unit. The most valid impression of the Hico-Lite's contribution to the speedlight manufacturing art is found in Hauman's moderate, realistic approach in the matter of "sales features":

The powerpack, including batteries, weighs exactly 6¼ pounds—a record low for a 230-watt-sec unit, yet not quite the lowest weight per unit of energy in the dry-battery field.

The stiff leather powerpack case is 6 inches high, 9¾ long, and 4 across the top. It's evenly balanced and curved to fit the user's side when suspended by its shoulder strap—not exactly the most compact of its type, for half a peck of split peas could easily be contained in the spaces between the two 240-volt "B" batteries, the eight capacitor "cans" and the walls of the case. However, it offers the convenience of ready accessibility when used or temporarily exhausted batteries have to be replaced: the top is easily opened on a flexible leather hinge and latched with a simple brass snap lock.

Recycling time between flashes ranges between 8 and 12 seconds—a respectable figure for the vast majority of applications, yet less than the 5- to 6-second performance of the 200-watt-sec Strobo-

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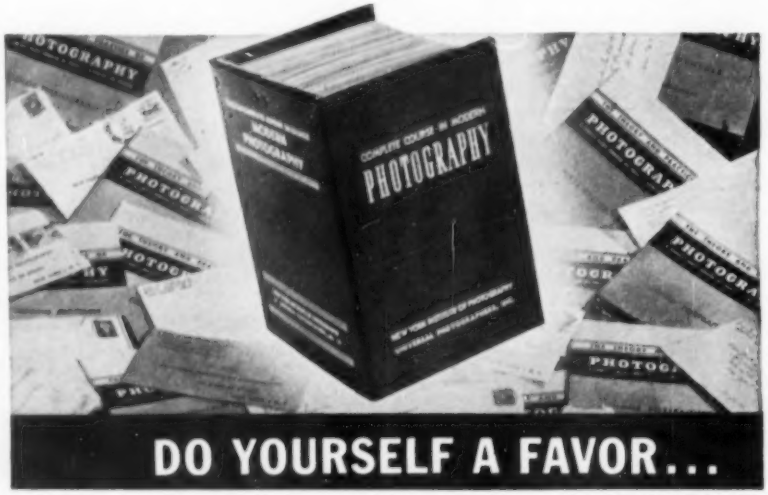

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flash III (now being made by the Strobo Research Division of Graflex, Inc.)

The nominal guide number for standard daylight-type color films (10 ASA equivalent) is in the 60-to-75 range which doesn't represent the highest light intensity on the flashtube reflector axis for so powerful a unit. Yet in practical comparison tests and under scientific measurement procedures, the over-all usable light output of the Hico-Lite and the evenness of illumination across the field covered by normal focal-length lenses (45 to 55 degrees of arc) matches the performance of the Stroboflash lamp head which, since its appearance several years ago, has been a paragon of efficiency in the dry-battery speedlight field.

Battery replacement costs are moderate. The pair of Olin No. 924 batteries that power the unit cost $15.90 and produce an average of 600 flashes at full power with steady use distributed over their normal 1-year lifetime—admittedly a compromise between weight, bulk, power, and safety-design factors.

The unit isn't quite indestructible—yet its "shock-proof" powerpack case is capable of withstanding the traditional, corny, drop-kick test; and the flashtube mounted in the hermetically sealed lamp head is given a lifetime guarantee by the manufacturer.

Flash duration is 1/500 second—average for energy loadings as high as 200 watt-seconds. It has the attendant advantage of minimum reciprocity failure which sets in at the faster flashing speeds.

Most important of the positive features of the "228" are those contributing to its flexibility. Unlike several other excellent dry-battery outfits, the batteries can be instantly interchanged with an accessory a-c conversion pack to conserve the batteries when working indoors. A-C pack and batteries have identical connectors and are identical in size. The Hico-Lite universal lamp head has a shoe that fits any miniature camera's accessory clip, and it can also be outfitted with an accessory flashgun adapter cup or with a Polaroid adapter shoe. There are two lamp outlets, one at each end of the powerpack case to facilitate use of the case on either shoulder, and additional outlets can be built in on special order. The deluxe model, which should be the standard for professional users, has a hi-low switch permitting the unit to be used at its full 230-watt-seconds power loading or at half power for close-ups with attendant savings in battery life and in about half of the normal recycling time. (Deluxe Hico-Lite units also include a flashing ready light in the lamp head which is not furnished in standard units.)

The principal shortcoming of the Hico-Lite which does not impair its impact because it will be repaired in the near future is the flimsy design of the lamp head connecting-cord couplings.

Price of the Hico-Lite 228 is moderate and also highly competitive—$194.50 for the deluxe outfit described above and $179.50 for the standard simplified unit. The A-C Conversion Pack is priced at $21.50; extra lamp head, $49.50; extension cords, connectors, and extra brackets, at nominal cost. Although the circuit does

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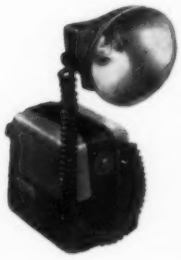
A light weight, compact unit. Flash duration of only 1/1400 second is ideal for action. Power Pack fits in coat pocket. 50 watt-seconds. Color guide number 28-35. Sells complete with batteries for only.....$104.90



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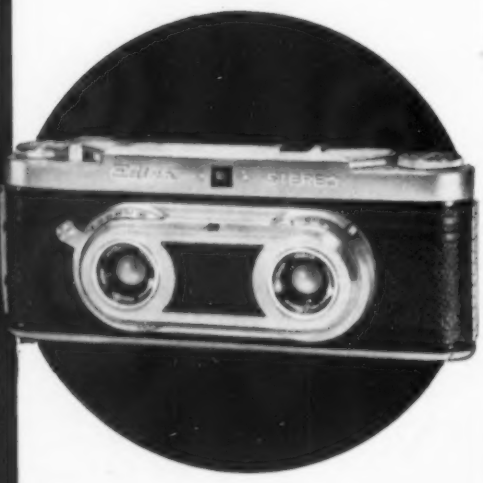

not employ a thyratron trigger tube to fire the flashtube, photo-slave adapters for multiple operation are available at $17.50 each. Hauman's sales plan includes a systematic coverage of professional prospects by individual representatives throughout most of the country plus a list of select retail outlets in the larger cities. These representatives and camera stores are also handling Hauman's smaller Model 109 Hico-Lite—a 115-watt second unit with the same lamp head and based on the same general "circuitry" and structure as the Model 228. It's apparent that we have a new vigorous independent in electronic flash—one whose entry into the field may have as much significance as the recent acquisitions of Strobo Research by Graflex and Heiland by Minneapolis-Honeywell which we noted here several months ago.

Mercury Batteries. The search for smaller portable electric-power sources for flashlamp firing over a wide range of temperatures has recently brought the P.R. Mallory company into the photoflash battery field. The principal contribution of the Battery Division of Mallory, which is located in North Tarrytown, New York, is a 1.5-amp 4-volt mercury battery. First of these to reach the market is their $1.35 PX-2 Mallory Mercury "Power Pak," which is used to power the new Harwood Hg Flash Gun for expendable photoflash lamps. An additional line of B-C cartridges is being planned in the shape of two conventional "C"-size cells end-on-end (PX-10), two C cells side-by-side (PX-20), and two "AA" penlite cells side-by-side (PX-18). These cartridges employ mercury batteries in combination with a new efficient Mallory capacitor designed together for two years of uninterrupted service life, with sufficient reserve power for multiple lamp flashing. Mallory mercury batteries are said to maintain their efficiency over a temperature range from 32 to 150 F; they do not swell, bulge, or leak at high temperatures or after they become exhausted. They are small in size, have a useful life of more than a year, and maintain a relatively constant voltage until the very last stages of their life.

Pin-Point Arc Lamps. A new line of Zirconium Concentrated Arc Lamps and Power Supplies has just been announced by the Burton Mfg. Co., 11201 West Pico Blvd., Los Angeles 64, Calif. This should be good news to photomicrographers, photogrammetrists, and other workers in the photographic and graphic arts field who have been following the evolution and progress of this unusual type of light source, which made its debut in 1946 under the auspices of Western Union. It had been developed originally as a means of visual communication, but photographic enlarging, projection, contact printing, and illumination proved far more compelling applications so that W.U.'s rights were eventually transferred to Sylvania, who have made licenses available to interested manufacturing companies. A complete descriptive brochure and price list covering the Burton line may be obtained by writing that organization.

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1955 SPEED GRAPHIC BOASTS NEW RANGEFINDER SYSTEM

Latest model Speed Graphic (above) features: **1** Optical viewfinder that accepts nine different masks. (Masks shown at left.) **2** Cams that adapt rangefinder to different lenses. **3** Rangelight for focusing in darkness.

THE latest model (1955) Speed Graphic manufactured by Graflex, Inc., Rochester, N. Y., features a rangefinder that operates on an interchangeable cam system and can be adapted to any lens that will fit the Graphic format. Nine cams that adapt the rangefinder to nine Graflex lenses of various focal lengths are now on the market. All other lenses must be sent to Graflex so that a special cam can be made to match the lens focal length perfectly.

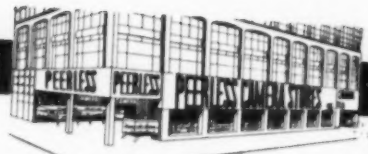
With this coupling system, a photographer first changes his lens, sets the front standard at corresponding infinity stops, and then slips a cam into a track under the rangefinder that automatically matches the lens to rangefinder.

According to the manufacturer, the rangefinder is so constructed that extreme heat or cold will not throw it out of adjustment, and so it will withstand rough treatment. No prisms are used in it. Instead, two mirrors are placed on a free-floating rod. This rod extends into the viewfinder (which is located right next to the rangefinder) and is attached to an eyepiece. As the photographer focuses, the eyepiece in the viewfinder moves also, and corrects for parallax.

A major change in the appearance of the Speed Graphic results from positioning the unique rangefinder on the top of the camera, next to the optical viewfinder. Former models of the Graphic had the rangefinder on the side of the camera in a vertical position.

After a lens has been placed in the front standard, and the cam slipped into the rangefinder track, the field of view in the optical finder is changed to match the lens by means of a mask (or, in the case of a wide-angle lens, a front element attachment). Masks (*Continued on page* 131)

Graflex lenses with ready-made cams now on market for new Speed Graphic (below). Not included is 100-mm Ektar wide-field lens. Top row, left to right: 127-mm Ektar, 135-mm Optar, 153-mm Ektar, and 15-inch Tele-Optar. Lower row: 90-mm Optar, 8-inch Ektar, 162-mm Optar, and 10-inch Tele-Optar.



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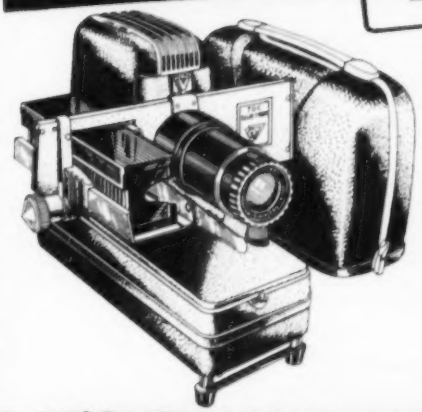

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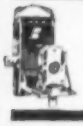

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ZEISS SUPER IKONTA C, f3.5 Ctd. Tessar Synchronized	114.00	59.00
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Kodak Flash Bantam, f4.5 ¢*		28.95
Kodak Pony 828, f4.5 ¢*	29.50	21.00
Kodak Pony 135, f4.5 ¢*	34.75	21.50
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Kodak Bantam RF, f3.8 ¢*	59.75	39.95
Kodak Stereo "35", f3.5 ¢*	84.50	64.50
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Minox II, f3.5 ¢		49.50
Mercury II, f2.7 ¢*		19.00
Robot II, f2 Biotar Lens		59.95
Robot Star, Coated f1.9*		87.50
Revere Stereo, f3.5 ¢*	174.50	77.00
Stereo Realist, f3.5 ¢*	159.50	74.50
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Kodak Medal II, f3.5 Ektar ¢*		112.00
Polaroid 110 Path., f4.5 ¢* RF	249.50	162.00
Polaroid 80, Coated Lens, *	69.95	42.50
Voigt Bes IIRF, Skop ¢, MX	124.50	68.95
Voigt Bes IIRF, f3.5 Hel ¢, MX	169.50	89.00

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Ciroflex B, f3.5		29.50
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Exakta "66", f2.8 Preset Tessar ¢	319.50	198.50
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Kodak Reflex I, f3.5 ¢*		38.00
Kodak Reflex II, f3.5 ¢*		58.00
Rolleicord II, f3.5 Zeiss		47.00
Auto Rollei, f3.5 Xenar, s.t.		78.95
Auto Rollei, f3.5 Tessar, s.t.		88.95
Auto Rollei, f2.8 Xeno, ¢*, MX	309.50	183.50
Auto Rollei, f.8 Plan, ¢* MX	309.50	183.50
Rolleicord V, MX, f3.5 Xenar	134.55	

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Kine Exakta, f2.8 Tessar*		87.95
Kine Exakta II, f2 Biotar		119.00
Kine VX, f3.5 Tessar, MX, ¢*	199.00	137.95
Kine VX, f2.8 P-S Tes., MX, ¢*	259.50	157.00
Contaflex Automatic, f2.8 Tessar, ¢*	169.00	96.50
Rectaflex, f2 Xenon, ¢*	295.00	137.50

16mm MOVIE CAMERAS

Pathe Super, f1.9 ¢, Turret	499.50	227.00
Cine Kodak Magazine, f1.9	150.00	67.00
B & H 70D, Turret, f1.9		149.50
Auricon Cine Voice	895.00	539.50
B & H 200 Turret, f1.9	244.95	159.00

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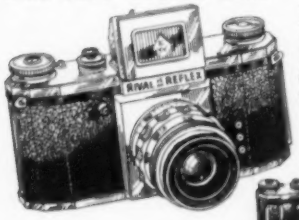

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B & H 172B Magazine, f1.9 ¢	164.95	101.95
B & H 172A Mag Turret, f1.9 ¢	199.95	119.00
Bolex f2.8 Pan Cinor ¢	219.50	146.95
Kodak Brownie, f1.9 ¢	46.75	31.50
DeJur Citation, f2.5 ¢	77.50	38.95
Keystone K-32 Olympic, f2.5 ¢	79.95	46.00
Revere 99 Turret, f2.8 ¢	99.50	54.00
Revere 40 Mag, f2.5 ¢	99.50	53.50
Revere 84 Turret, f1.9 ¢	147.50	78.50
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Revere P-90, 750 Watts	159.50	77.50
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Keystone A-82, 750 W, f1.6	139.50	75.95
Keystone K161V, 750 W, Splic.	159.50	85.95
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TDC Headliner, 200 Watt	33.50	22.50
TDC Showpak, 300 Watt, Case	52.50	28.95
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Argus, PSB300, Case	48.50	27.00
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3¼x4¼ Crown, f4.7 ¢, KFR, *	267.45	146.95
3¼x4¼ Ann. Graphic, f4.7, KFR		92.50
4x5 Crown, f4.7 ¢, KFR, *	271.45	147.50
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f2.8 Coated Carl Zeiss Tessar

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new books

PICTURE MAKING WITH THE ARGUS by Jacob Deschin. Published by Camera Craft Publishing Co., San Francisco. Hard cover, 6¼ x 9¼, 128 pages, illustrated in color and black-and-white, $3.

Not a man to let the dust settle, Jacob Deschin has followed his excellent *Rollei Photography* and *35mm Photography* with a third camera guide, this time devoted to the Argus C3, C4, and A4. Subtitled "A Working Manual," *Picture Taking with the Argus* is a readable, well-organized guide to these popular medium-priced 35-mm cameras, their parts, operation, special features, and picture-taking capabilities. As in the Rollei and 35-mm books, Deschin intersperses technical information with pictures-plus-captions intended to stimulate the reader into seeing and thinking photographically. Here, however, this book falls considerably short of the high standard set by the two previous ones. With the exception of a few pictures by Morris Jaffe and others, most of the non-technical illustrations are routine snapshots only.

DALI'S MUSTACHE, by Salvador Dali & Philippe Halsman. Published by Simon and Schuster, New York, N. Y. Hard cover, 5½ x 7, illustrated, 126 pages, $1.

Philippe Halsman, one of the wittiest of modern photographers, hit the jackpot a few years ago with *The Frenchman*, in which he interviewed the Gallic film star Fernandel with hilarious results. Having long had a practical affinity for the Spanish painter, Dali, Halsman now collaborates with that zany showman's versatile mustachios in a small book which runs a new gamut of camera humor.

Dali's Mustache certainly is an original sort of book of unusual interest to photographers. For in it, Halsman has a hilarious time with montages, collages, and a variety of camera and darkroom tricks, explained in an appendix. Although the wit gets a little strenuous and strained at times, it manages to stay on a pretty high level. Unfortunately, Dali is no Fernandel, whose personal warmth added to *The Frenchman's* appeal. Dali is a cold fish with an impersonal kind of lunacy not calculated to warm the cockles of more than a few thousand sophisticates.

But the book is worth the price for photographers who can learn a lot simply by watching the Halsman imagination at work in cahoots with a camera and an artist showman, who is not averse to making a fool of himself.—*B.D.*

THE PRACTICAL WAY TO PERFECT ENLARGEMENTS by Joseph Foldes. Published by Camera Craft Publishing Co., San Francisco. Cloth bound, 6½ x 9¾, illustrated, 190 pages, $5.

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(*Continued on page 92*)

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I have seen some interesting photographs in your magazine from time to time made with colored gelatins or filters over the light sources. I would like to make some of these and wonder whether my exposure meter will give me accurate readings for such pictures.—G. P., Pittsburgh, Pa.

This is one of those iffy questions that has so many different things depending on each other that it's hard to give a concise answer. However, in general, a good exposure meter will give you a pretty good idea of what exposures should be. Exposure meters in common use are generally responsive to the same light as color films are, and so can be used with fairly accurate results. However, several photographers who have done a good deal of experimental work of this sort warn that you should be sure that you do not have excessive contrast in your lighting of a subject and expect to get the full visual range of tone and color in your finished picture. In other words, if you have two lights that are of equal intensity and one is covered with a gelatin of high transmission and the other with a gelatin that does not pass such light, you will no longer have balanced intensity on your subject. And although the scene may appear visually acceptable, the color film may not have such a range of response and you'll get an excessively contrasty result.

•

In your columns you mention only Kodachrome and Ansco Color for use in 35-mm cameras. Have you any comments to make on the high-speed films that are advertised in the columns of your magazine. And how about processing color negative films myself?—G. McK., London, Canada.

Some columns back we mentioned Aero Ektacolor film, and what we said about it holds pretty well. There are lots of color films being offered in our ads from firms that will process these films for you. However, in almost all cases these films are not marketed by their manufacturers, and you (and I) never know specifically what we are getting. These films are not *bad*; they are good, and they do produce results that are often quite satisfactory. But since we do not know what emulsions they are, how old they are, the conditions under which they've been stored, etc., we frankly don't know what to tell you about them.

As to processing color negative films yourself, Kodak does not recommend that anyone attempt to process motion-picture negative color film unless they have large studio facilities and can adjust developing technique for each emulsion. Kodacolor is processed with special equipment, and Ansco's new color negative material is still only in a trial period of marketing. So if you are anxious to do color negative work, your only choice, I think, is to use Ektacolor Sheet Film. Full instructions come with the developing kits supplied for this.

•

I have noticed that some color slides I shot not more than a year ago have begun to fade and change color. Someone told me they were not properly processed and suggested I use color film I could process myself. But what can I do about my slides that are fading?—R. G., Lincoln, Nebraska.

If you know where these films were processed, I'd talk to the processor. However, if they were processed by the manufacturer, I'd ask my dealer whether I have been storing them improperly, and probably send some samples back to the Sales Service Department of the film manufacturer. This is not to start a million people sending back to the maker color films they're unhappy about, but rather a serious attempt to straighten out a possibly accidental situation. It is not impossible that film or processing is to blame and with the many many boxes of color film being manufactured, it's really wonderful what a high percentage of it is excellent.

Are you sure that your slides have not been exposed for too long a time to bright sunlight? Or in an extra powerful projector? Or stored in a hot or damp place? Properly stored, transparencies last for a good many years before the dyes begin to fade.

•

Is there some method of salvaging my underexposed Ektachromes and still retain some color rendition?—W. L. S., Chicago.

This depends a good deal on how much they are underexposed. If the Ektachromes are slightly under, say half a stop or so, probably your best bet is to try one of the color-film bleach formulas which appear in the Kodak booklet *Retouching Color Transparencies*. However, if you've missed by more than half a stop, you'll find that you can't do much this way. I have seen some rather interesting salvaging, however, by duping underexposed transparencies mounted over a very intense light, such as a diffused photoflood. We've discussed duping transparencies before, and either one of the Kodak-recommended methods, or the use of Ansco Color Duplicating Film would probably be quite satisfactory here. I think I'd probably make a cardboard cutout mask to slip the transparencies in, with intense, even illumination behind it, and copy the transparency with my camera. You might even rescue transparencies which are as much as a stop and a half or two stops off this way.

Questions of general interest to the color photographer will be answered in this department. However, individual replies can not be given for questions that are not used.—Ed.

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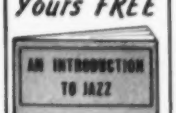

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The long awaited, new model Nikon, Model S-2, has arrived. And it is quite evident that the manufacturer has gone to great lengths to make it the most complete 35mm camera of its kind. It does, in fact, combine more known 35mm camera features than any other of its type on the market.

Life-Size Rangefinder-Viewfinder

One of the outstanding improvements in the new Nikon S-2 is in the finder. You feel as if you aren't looking through a camera finder at all, but rather that you are framing the subject itself in a luminous rectangle. The image is life-size. The illusion of realism is so effective that you can actually use the finder with both eyes open. It is of the single eyepiece type and provides 1:1 magnification. And because it also incorporates the function of a long-base coincident rangefinder, the advantage of this life-size image applies to focusing as well as viewing – it is easier, more certain and more accurate.

Rapid Film Transport and Rewind

Two extremely useful features have been incorporated in the new Nikon S-2 which have, for some reason, been overlooked by some of the other 35mm cameras. They are the Rapid Film Transport and Hi-Speed Rewind.

The Rapid Film Transport consists of a lever operated by the user's thumb. One short stroke advances the film to the next exposure and simultaneously winds the shutter. There is no danger of inadvertant double or partial exposure. Yet, double exposures can be deliberately made without rewinding the film.

The Hi-Speed Rewind consists of a lever-crank on the rewind knob. It permits a completed, 36-exposure roll to be rewound in less than 20 seconds. When not in use, the lever crank folds and nests flush with the rewind knob.

Synchro Selector

A calibrated dial permits the shutter to be set for positive synchronization with all flash bulbs. Settings are possible for shutter speeds up to 1/1000th second. There is also provision for synchronization with speedlight units at 1/50th.

Other Desirable Features

Experience with 35mm photography during the last 25 years has demonstrated and established the desirability of certain camera construction features. The Nikon S-2 has retained all of these, in addition to the new ones discussed, in an effort to develop the 35mm camera with 'every feature you'd want'.

All settings and adjustments, except lens aperture, are conveniently located at the top of the camera. Shutter speeds can be set either before or after the shutter is wound. And the range covers 12 speeds from 1 second to 1/1000th, each consecutive setting representing ½ of last exposure, plus Time and Bulb. It is significant that the shutter includes a 1/15 second exposure setting. This speed had been requested by professionals who find it indispensable for available light photography under adverse light conditions.

The focusing control for normal and wide angle lenses, also situated at the top of the camera body, is operated with the middle finger of the right hand while the forefinger rests on the shutter release, ready for the exposure. The left hand is free to support the camera without performing any other function. This is smoother and more certain than the early method of focusing by manipulating the camera mount directly.

Two other popular features have been retained on the new Nikon S-2. The completely removable camera back and fixed take-up spool offer the advantage of utter simplicity in loading the camera, also insuring that the film is correctly aligned. Another welcome improvement is the location of the tripod socket, eliminating stress and strain to the camera base and back. In the new Nikon S-2, the tripod socket is built directly into the body and is centered for better balance.

The main flash terminal has been so located as not to interfere with focusing, viewing and general handling of the camera. The bayonet lens mount has also been retained, thereby continuing a feature which has since been adopted by other camera manufacturers. In this way only is there absolute assurance of proper seating of the lens and its correct alignment with relation to the film plane. A quarter-turn lock action permits quick and easy interchange of lenses.

An auxiliary flash terminal has been included in front of the camera accessory clip. It is expected that a special compact flash unit will be shortly announced, designed to slide into the accessory clip. Contact with the flash terminal will be made without the need for external wires.

Last, and certainly not least, is the fact that the Nikon camera is furnished with Nikkor lenses as standard equipment. This is quite natural inasmuch as both the Nikon camera and Nikkor lenses are made by the same manufacturer, under the same roof. However, because of the tremendous preference for Nikkor lenses expressed by so many users of other 35mm cameras, the availability of the Nikkor lenses with the Nikon S-2 must be regarded as an important feature.

Prices are: Nikon S-2 with 50mm Nikkor f2 lens $299.50; Nikon S-2 with 50mm Nikkor f1.4 lens $345.00. Additional information may be obtained by writing to NIKON Incorporated, 277 Fifth Avenue, New York 16, N. Y.

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MINIFILM YOUR PHOTOGRAPHIC HEADQUARTERS FOR 1955!

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From Minifilm's vast supply of Used Photographic Equipment. CAMERAS, LENSES, PROJECTORS, ENLARGERS, etc. ALL LATEST MODELS. All in First Class Condition. ALL PRICED SENSATIONALLY LOW!!

ONLY MINIFILM . . . offers you these distinct price quotations! Highest trade-in allowances! Lowest selling prices! Save tremendously on used like new equipment . . . all fully guaranteed. The below listed items were compiled as a guide for your convenience.

1. Select the equipment of your choice at the price shown in column one for new equipment or column two for used equipment.
2. If you have equipment to trade, check if it is represented in listing and deduct the allowance shown for it in column three.
3. Rush your order (and trade-in equipment if you have such) plus your remittance to cover—or instructions to ship C.O.D. for the balance.

MINIFILM will immediately forward the equipment you desire. Of course your order will be fully insured. OUR FAMOUS 30 DAY MONEY BACK GUARANTEE AND 2 YEAR SERVICE GUARANTEE ASSURES YOU OF COMPLETE SATISFACTION.

Lenses for LEICA, CANON, CONTAX, NIKON

	New	Used	Trade-in
21 mm f4.5 Zeiss Biogon ¢	$249.00		$130.00
28mm f6.3 Hektor W.A.	102.00	$ 69.00	50.00
28mm f3.5 Serenar W.A.	134.00	84.00	60.00
35mm f2.8 Biometar W.A.¢		109.00	70.00
35mm f2.8 Biogon W.A.¢	183.00	127.50	100.00
35mm f3.5 Elmar W.A.¢		48.00	35.00
35mm f3.5 Nikkor W.A.	97.50	57.00	40.00
35mm f2.5 Nikkor W.A.	149.50	97.50	70.00
35mm f3.2 Serenar W.A.	94.00	72.00	45.00
35mm f2.8 Serenar W.A.	110.00	78.00	50.00
35mm f3.5 Summarong W.A.	95.00	54.50	40.00
50mm f3.5 Elmar¢	57.00	34.00	30.00
50mm f2 Nikkor¢	110.00	69.00	45.00
50mm f1.4 Nikkor¢	199.50	119.00	80.00
50mm f1.5 Serenar¢	168.00	109.00	80.00
50mm f2 Sonnar¢	146.00	104.50	75.00
50mm f1.5 Sonnar¢	175.00	119.50	90.00
50mm f2 Summitar	88.00	63.75	45.00
50mm f2 Summicron¢	156.00	106.00	85.00
50mm f1.5 Summaritz	177.00	114.00	90.00
50mm f1.5 Schneider Xenon¢	90.00	74.50	50.00
50mm f3.5 Tessar¢	70.00	47.50	30.00
73mm f1.9 Hektor Tele		69.00	50.00
85mm f2 Nikkor¢	179.50	99.00	70.00
85mm f1.5 Serenar¢	238.00	137.50	110.00
85mm f2 Sonnar¢ Tele	$229.00	$109.00	$ 80.00
85mm f1.5 Summarex¢	360.00	186.00	150.00
90mm f4 Elmar¢	90.00	58.00	40.00
90mm f4.2 Thambar Tele		89.00	60.00
100mm f4 Serenar¢	87.00	49.00	35.00
135mm f4.5 Leitz Hektor Blk		69.00	40.00
135mm f4.5 Hektor¢	135.00	88.50	75.00
135mm f3.5 Nikkor¢	145.00	85.00	62.00
135mm f4 Serenar¢	108.00	69.00	50.00
135mm f4 Sonnar¢	146.00	88.00	70.00
135mm f4.5 Steinheil¢	54.50	37.50	25.00
200mm f4.5 Telyt¢	156.00	104.00	75.00
300mm f5.6 Kilar Repscope¢	284.50	178.00	120.00
400mm f5.6 Novoflex¢	189.50		85.00

¢ coated * flash synchronized

Lenses for EXAKTA, CONTAX D, PRAKTICA, PENTACON

	New	Used	Trade-in
28mm f3.5 Angenieux¢	$120.00	$ 78.50	$ 60.00
35mm f2.5 Angenieux¢	99.50	61.00	50.00
40mm f3.5 Cassaron¢	49.50	31.00	20.00
40mm f4.5 Tessar¢ W.A.	75.00	47.50	35.00
50mm f1.5 Angenieux Pre-set¢	165.00	109.00	85.00
50mm f2.8 Tessar preset¢	65.00	39.50	25.00
50mm f2.8 Westanar Auto Diag.	69.50	44.50	30.00
50mm f1.9 Xenon Autog	169.50	119.00	90.00
58mm f2 Biotar¢		49.00	35.00
58mm f2 Biotar preset¢	125.00	67.50	45.00
58mm f1.9 Primoplan¢		44.00	30.00
75mm f1.5 Biotar¢	216.50	98.50	75.00
85mm f2.8 Steinheil¢	65.00	42.00	30.00
90mm f2.5 Angenieux¢	84.50	58.50	40.00
90mm f1.8 Angenieux¢	149.50	102.00	75.00
90mm f4 Sun¢	51.95	24.50	20.00
90mm f4 Sun preset¢	64.95	33.50	25.00
135mm f2.8 Steinheil Quinar preset	149.50	97.50	70.00
135mm f3.5 Angenieux¢	75.50	49.50	30.00
135mm f4.5 Steinheil¢	60.00	39.50	25.00
135mm f3.8 Sun¢	59.50	29.50	20.00
135mm f3.5 Sun preset¢	74.95	36.50	25.00
135mm f3.5 Tele Colnar preset¢	84.95	44.00	35.00
135mm f4.5 Tele Xenar¢	58.95	39.50	30.00
135mm f4 Zeiss Triotar¢	75.00	49.00	35.00
180mm f5.5 Tele Xenar¢	82.75	54.50	40.00
180mm f2.8 Zeiss Sonnar preset		238.00	150.00
240mm f5.5 Tele Xenar¢	115.75	78.00	55.00
360mm f5.5 Schneider Tele Xenar¢	169.95	114.00	80.00
400mm f5.6 Novoflex¢	189.50		85.00
400mm f5.5 Tele Megor¢	199.50	139.00	100.00

ACCESSORIES FOR IMPORTED CAMERAS

	New	Used	Trade-in
Leitz Focaslide	$ 36.00	$23.00	$15.00
Leitz Horect Finder	39.00	24.00	16.00
Leitz B.C. Flashgun	24.00	18.00	12.00
Leitz Mirror Reflex Housing	102.00	69.00	50.00
Leitz Mooky Attach	$ 31.50	$22.00	$15.00
Zeiss Revolv. Univ. Finder	80.00	43.00	30.00
Zeiss Contameter Close-Up	81.00	43.00	30.00
Rollinkin Back	35.78	22.50	15.00
Rollei Plate Back 3 Holders	38.27	24.50	15.00
Rollei Flashflex B.C. Gun	22.95	14.50	10.00
Universal Image Erecting Finder	24.50	16.00	10.00
Universal Zoom Finder	22.50	15.00	9.00
Micro Ibso Attach	108.00	79.00	60.00
Rapid Leicavit for IIIf	24.00	16.00	10.00
Novoflex Bellows for Leica, Contax	39.50	.....	15.00
Novoflex for Exakta, Pentacon, etc.	39.50	.....	15.00
Novoflex Reflex Housing for Leica-Contax	145.00	.....	75.00
Novoflex tripod and Stereo Rackover	25.00	.....	12.00
Novoflex Universal Panoramic attach	11.50		

LEICA CONTAX NIKON CANON

	New	Used	Trade-in
Canon IV S 2 f1.8 Serenar¢*	$284.00	$165.00	$130.00
Contax I f2.8 Tessar		46.00	30.00
Contax I f2 Sonnar		59.00	40.00
Contax II f2 Sonnar		99.00	70.00
Contax II f1.5 Sonnar		119.00	90.00
Contax III f2 Sonnar		109.00	80.00
Contax IIA f2 Sonnar¢*	345.00	168.00	125.00
Contax IIA f1.5 Sonnar¢*	374.00	189.50	145.00
Contax IIIA f2 Sonnar¢*	383.00	199.00	150.00
Contax IIIA f1.5 Sonnar¢*	412.00	218.95	165.00
Leica A f3.5 Elmar		29.00	20.00
Leica Std. f3.5 Elmar		39.00	30.00
Leica D f3.5 Elmar		59.00	40.00
Leica IIIA f3.5 Elmar		79.00	55.00
Leica IIIA f2 Summar		85.00	65.00
Leica IIIC f3.5 Elmar¢		92.50	70.00
Leica IIIC f2 Summitar¢		125.00	100.00
Leica IIIF f3.5 Elmar¢*	177.00	127.00	100.00
Leica IIIF f3.5 Elmar¢*	237.00	152.00	120.00
Leica IIIF f2 Summitar¢*	268.50	168.50	145.00
Leica IIIF f2 Summicron¢*	336.00	197.50	160.00
Leica IIIF f1.5 Summarit¢*	357.00	219.00	175.00
Leica M3 body	288.00	.....	150.00
Leica M3 f3.5 Elmar¢*	346.00	.....	175.00
Leica M3 f2 Summicron¢*	447.00	.....	220.00
Leica M3 f1.5 Summarit¢*	468.00		230.00
Nikon f2 Nikkor¢*	269.00	154.00	105.00
Nikon f1.4 Nikkor¢*	299.95	167.50	125.00

35MM SINGLE LENS REFLEX

	New	Used	Trade-in
Alpa 4 f2.8 Delft Affinong*	$239.00	$159.00	$125.00
Alpa 5 f1.9 Xenong*	359.00	219.00	155.00
Alpa 7 f1.8 Switarg*	459.00	299.00	200.00
Exa f2.8 Wester MXg	85.00	46.95	35.00
Exa f3.5 Tessar MXg	109.50	67.50	50.00
Kine Exakta f3.5 Tessar¢*		72.50	50.00
Kine Exakta II f2 Biotar		109.00	85.00
Exakta V f3.5 Tessar MX¢		119.00	90.00

Kodak's NEW FILM CAVALCADE...

- *Four Miracle Film Products*
- *Four Revolutions In Speed, Latitude & Price*

Kodak's NEW 35mm EKTACHROME
World's Fastest Amateur Color Film

1 Roll 20 Exp. (Daylight or Indoor) **1.85**
Developing & Mounting.. **1.25**
Regular Price for 1—20 Exp. Roll.....Total **3.10**

AT MINIFILM ONLY 1 Roll **2.85**
SUPER SPECIAL 3 Rolls For **7.50**

EKTACHROME 120 & 620 SPECIAL PRICE
Including Developing and Mounting
1 Roll for 1.95
3 Rolls for 5.50

KODAK'S NEW KODACHROME
Price per 35mm—20 Exp. Roll..... **1.85**
Deluxe Developing & Mounting **1.50**
Reg. Price **3.35**

MINIFILM'S SPECIAL PRICE
3 Rolls for 8.75
All Film Above Factory Sealed Cartons

Kodak's NEW EKTACOLOR!
Hi-Speed – A.S.A. 32 – So Economical

This new Color Film has just about everything. It's ULTRA FAST and has Great Latitude. Pastels and delicate skin tones are faithfully reproduced without either that washed-out or coppery look. With this latest color improvement from Kodak you won't need a $200 Camera for superlative color shots. Even a Box Camera will take fully timed color pictures with this New Film.

BEST OF ALL . . . LOOK AT THESE PRICES!

127—8 or 12 Exp.
3 Rolls for **2.65**

120-620—8 or 12 or 16 Exp.
3 Rolls for **3.25**

116-616—8 or 12 or 16 Exp.
3 Rolls for **4.35**

828—8 Exp.—3 Rolls for **2.35**

AND THINK OF IT! FROM A 120-620 (2¼x3¼) A BEAUTIFUL JUMBO SIZE COLOR PRINT, 3½x5, CAN BE MADE FOR ONLY 30c.

35mm EKTACHROME RELOADS!! 35mm KODACHROME RELOADS!!

For The First Time! 1956 Dated—Daylight or Indoor

These Reload Cartridges are Laboratory packed and Quality Controlled by MINIFILM in its own Air Conditioned Darkrooms. Twenty and 36 Exposure Cartridges are manufactured daily from 100 ft. rolls received fresh from Eastman Kodak. Careful supervision and tremendous sales turn-over insures your getting reloads which are equal in quality and freshness to cartridges packed at the factory. THE ONLY THING DIFFERENT IS THE PRICE. Take a tip from film-wise professionals . . . **USE MINIFILM RELOADS.**

35mm Ektachrome Including Developing & Mounting . . .
20 Exp. .....1 Roll **2.50**
3 Rolls **6.95**
36 Exp. .....1 Roll **3.75**
2 Rolls **6.95**

35mm Kodachrome Including Developing & Mounting . . .
20 Exp. .....1 Roll **2.50**
3 Rolls **6.95**
36 Exp.....1 Roll **3.95**
2 Rolls **6.95**

CONVERT YOUR f3.5 LENS INTO f2 AT NO COST . . .

Just use KODAK'S NEW MIRACLE TRI-X, and you will get shots never before possible with your present lens. TRI-X will step up the speed of your f3.5 to f2.

Kodak rates this super-speed 35mm film at ASA 200 Daylight and 160 Tungsten. Some of our professionals get fully timed pictures even when rating the speed at ASA 600. We have seen beautiful portraits taken only by candlelight. The latitude, the speed, and at the same time the fine grain of this great film achievement are unbelievable. It is truly a miracle in Black & White.

SEE FOR YOURSELF!

35mm—20 Exp. Reloads
6 Rolls for **2.49**

35mm—36 Exp. Reloads
4 Rolls for **2.39**

35mm—BULK FILM
50 ft. **2.25** 100 ft. **3.95**

Fast Mail Order—Please Enclose 20c Extra For Postage & Handling on All Film Orders.

30 DAY FREE TRIAL PERIOD

10% DOWN!

You Can Buy That Camera Now Under Minifilm's Time Payment Plan with just 10% Down—10% A Month. Trade In of Your Old Equipment Can Also Be Accepted As Down Payment.

	New	Used	Trade-in
Exakta V f2 Biotar MXg		$139.00	$110.00
Exakta VX f3.5 Tessar MXg	$199.00	132.95	100.00
Exakta VX f2.8 Tessar pre-set MXg	259.50	156.00	120.00
Exakta VX f2 Biotar pre-set MXg	335.00	172.00	135.00
Contaflex f2.8 Tessar Auto RFg*	169.00	97.50	75.00
Contax S f2 Biotar P.S.g*		109.00	75.00
Contax D f2 Biotar P.S.g*	199.00	119.00	80.00
Pentacon f2.8 Westanar Autog*	249.50	119.00	95.00
Pentacon f2 Biotar pre-set*	249.50	129.00	100.00
Praktica FX f2.8 Westar MXg	99.50	42.50	30.00
Praktica FX f1.9 Primo MXg	149.50	67.00	45.00
Praktica FX f2 Biotar P.S. MX	169.50	84.00	65.00
Praktiflex f2.9 Victar g		34.00	20.00
Praktiflex f2 Biotar g		69.00	45.00
Rectaflex f2 Xenon RF g*	295.00	137.50	105.00

35MM CAMERAS

	New	Used	Trade-in
Agfa Karat II f2.8 Xenar RF		$ 32.00	$ 20.00
Ansco Karomat f2 RF MXg	$125.00	73.50	55.00
Ansco Regent f3.5 MXg	54.50	34.50	20.00
Argus A 4 f3.5g*	32.50	22.00	15.00
Argus A f4.5		9.00	5.00
Argus C2 f3.5 RF		19.00	12.00
Argus A2 f4.5		14.50	9.00
Argus 21 f3.5g*	59.50	29.50	20.00
Argus C 3 RF case and flash	66.50	33.50	28.00
Argus C4 f2.8 RF MX	84.50	48.95	35.00
Super Baid. f2 RF MXg	69.50	45.00	35.00
B&H Foton f2 RF MX	498.00	265.00	200.00
Boisey B f3.2 RF g	49.50	24.50	15.00
Boisey B-2 RF, case and flash	66.50	34.00	25.00
Boisey B22 f3.2 RF g*	69.50	35.50	30.00
Boisey C f3.2 Reflex RF g*	89.50	45.95	30.00
Boisey C32 f3.2 Reflex RF g*	99.50	67.50	50.00
Clarus f2.8 RFg*		37.50	30.00
Contessa f2.8 RF meter MXg*	153.00	94.00	70.00
Contina II f2.8 RF MX g	63.00	44.00	20.00
Ditto 99 f2.8 Rap. Seq. g*	49.00	37.00	25.00
Edinea f2 Xenon g*	49.50	29.50	20.00
Edinea III RF f2 Xenong*	64.50	41.50	30.00
Iloca B f2.9 Ilitar RFg*	79.25	54.50	35.00
Kodak 35 f3.5 RFg*		32.50	20.00
Kodak Flash Bantam f4.5g*	56.00	29.00	20.00
Kodak Bantam 828 f4.5		18.00	12.00
Kodak Bantam Spec. 12 RFg		57.00	40.00
Kodak Pony 828 f4.5 C*	29.50	17.00	12.00
Kodak Pony 135 f4.5 C*	29.75	18.00	12.00
Retina I f3.5 Xenar		29.00	20.00
Retina II f2 Xenon RF		59.00	40.00
Kodak Retina IIA RF MXg	127.50	84.50	65.00
Kodak Signet f3.5 Ektar RFC*	87.50	49.00	40.00
Kodak Town & Country f3.9 RF case & flash	75.00	49.00	30.00
Konica II f2.8 RF MXg	119.75	69.50	50.00
Minox IIIS chain & case*	139.50	85.00	60.00
Minox II f3.5g		49.50	30.00
Mercury II f2.7g*	41.50	19.50	12.00
Robot f2.8 Tessar Rap Seq		39.00	25.00
Robot II f2 Biotar Rap Seq		54.00	30.00
Robot IIA f1.9 Xenon Rap Seq.g*	89.50	57.00	40.00
Robot Star f1.9 Xenon Rap Seq.g*	127.50	79.50	55.00
Voigt Prominent f2 RF MXg	220.00	142.00	100.00
Voigt Prominent f1.5 RF MXg	270.00	152.00	105.00
Voigt Vitessa f2 RF MXg	127.50	84.00	55.00
Voigt Vito II f3.5g*	54.50	31.00	25.00
Voigt Vito III f2 RF MX*	119.50	79.50	55.00

35MM STEREO CAMERAS

	New	Used	Trade-in
Edixa Stereo f3.5g	$ 69.50	$ 39.50	$30.00
Iloca II f3.5g*	69.50	49.50	30.00
Kinder f3.5 RFg*	99.50		45.00
Kodak f3.5g*	84.50	57.50	40.00
Revere f3.5 RFg*	174.50	86.00	70.00
Stereo Realist f3.5 RFg*	159.00	79.00	60.00
Stereo Realist f2.8 RFg*	198.50	119.00	95.00
TDC Colorist f3.5g*	99.99	69.00	45.00

2¼x2¼ REFLEX CAMERAS

	New	Used	Trade-in
Ansco Auto Reflex f3.5g	$189.25	$ 84.00	$ 60.00
Argoflex E f4.5		17.00	10.00
Argoflex EF f4.5g	59.50	29.00	15.00
Ciroflex B f3.5g		29.00	20.00
Ciroflex C f3.5/400g	75.00	37.00	25.00
Ciroflex D f3.5g	75.00	48.00	30.00
Ciroflex E f3.5/400g*	99.50	59.50	40.00
Ciroflex F f3.2 MXg		72.00	50.00
Dejur f3.5g*	99.50	49.50	30.00
Exakta 66 f2.8 Tessar MXg	319.50	218.00	165.00
Flexarette f3.5g*	69.50	47.50	25.00
Graflex 22 f3.5 C*	93.00	49.00	35.00
Graflex 22/400 f3.5 C*	117.50	78.00	55.00
Hasselblad f2.8 Ektar /1600 C*	476.00	279.00	215.00
Hasselblad f2.8 Ektar /1000 C*	379.50	217.50	175.00
Ikoflex IA f3.5 Tessarg*	96.00	59.00	35.00
Ikoflex IIA f3.5 Tessarg*		86.00	60.00
Ikoflex IIA Auto f3.5 Tessar MXg*	126.00	95.00	70.00
Kodak Reflex I f3.5g*		39.00	25.00
Kodak Reflex II f3.5g*		59.00	40.00
Mamiyaflex II f3.5g*	99.95	59.50	35.00
Mamiyaflex Auto f3.5g*	179.95	99.50	65.00
Master Reflex f3.5 Meyerg*	185.00	119.50	75.00
Primar Reflex II f3.5 Tessarg*	169.00	124.00	90.00
Ricohflex VI f3.5g*	44.95	22.00	15.00
Rolleicord I f4.5 Tritoar		39.00	25.00
Rolleicord II f3.5 Triotar		$ 47.50	$ 30.00
Rolleicord III f3.5 Xenarg*		67.50	45.00
Rolleicord IV f3.5 Xenar MXg	$149.50	86.00	70.00
Auto Rollei f3.5 Xenar		83.00	60.00
Auto Rollei f3.5 Tessar		91.50	65.00
Auto Rollei IIB f3.5 Xenarg*		98.50	80.00
Auto Rollei IIB f3.5 Tessarg*		107.50	90.00
Auto Rollei IIB f2.8 Tessarg*		149.50	110.00
Latest Rollei III f3.5 Xenar MXg	234.50	138.00	110.00
Latest Auto Rollei III f3.5 Tessar MXg	249.50	154.00	120.00
Latest Auto Rollei 2.8 C f2.8 Xenctar MXg	309.50	216.00	160.00

ROLL FILM CAMERAS

	New	Used	Trade-in
Ansco Super Speedex f3.5 RFg*	$119.50	$ 79.50	$ 55.00
Ansco Speedex f4.5g*	36.50	22.50	15.00
Ikonta A f3.5 Tressarg*	92.00	59.50	40.00
Ikonta IIIB f3.5 Tessarg*	99.00	67.50	45.00
Ikonta IIC f3.5 Tessarg*	125.00	79.50	55.00
Ikonta IIIC f3.5 Tessarg*	136.00	87.50	60.00
Kodak Tourist II f4.5g*	72.50	39.50	28.00
Kodak Cheyron f3.5 RF 800 MX	198.50	142.50	100.00
Kodak Medalist I f3.5 Ektar		57.00	45.00
Kodak Medalist II f3.5 Ektarg*	304.75	114.00	80.00
Kodak Monitor f4.5		29.50	18.00
Kodak Vigilante f6.3		14.95	10.00
Polaroid Highlander	69.95	42.50	30.00
Polaroid Landg*	89.75	44.25	35.00
Polaroid Pathfinder f4.5 RF	249.50	164.50	123.00
Super Ikonta A f3.5 Tessar RFg*	99.00	57.00	40.00
Super Ikonta B f2.8 Tessar RF g*	139.00	87.50	65.00
Super Ikonta BX f2.8 Tessar RFg*	163.00	102.00	75.00
Super Ikonta C f3.5 Tessar RFg*	114.00	62.00	45.00
Voigt Bessa I f3.5	72.50	39.50	25.00
Voigt Bessa II f3.5 RF MXg	124.50	69.00	50.00
Voigt Perko II f3.5 MXg	76.50	44.00	30.00

PRESS CAMERAS

	New	Used	Trade-in
23 Ann. Graphic RF f4.5 lens		$ 84.50	$ 60.00
34 Ann. Graphic RF f4.7 lens		92.00	60.00
45 Ann. Graphic RF f4.7 lens		109.00	80.00
2¼x3¼ Century Graphic f4.5 KRF g*	$145.45	99.00	75.00
4x5 Super D Graflex f5.6 Ektar Auto Diag*	298.50	159.00	115.00
2x3 Linhof Super Tech RF 3 lenses comp	569.90	348.00	280.00
4x5 Linhof Super Tech RF f4.5 MX	389.75	208.00	165.00
2¼x3¼ Pacemaker Speed f4.5 KRFg*	313.95	159.00	120.00
3¼x4¼ Pacemaker Crown f4.7 KRFg*	267.45	149.00	110.00
4x5 Pacemaker Speed f4.7 KRFg*	315.45	179.00	135.00

SLIDE PROJECTORS

*Blower cooled

	New	Used	Trade-in
Ampromatic, 500 W. Automat. case*	$ 84.50	$ 41.50	$30.00
Argus PB 300, case*	48.50	27.25	20.00
Gold Cromatic Auto 300 W, case*	59.95		
Gold Manumatic 300 W *	58.50	27.50	20.00
Gold Coronet 300 W, case*	44.75	22.00	15.00
Gold Reflex 300 W, case 2¼ *	86.50	49.00	35.00
Kodaslide Merit 150 W	26.10	16.50	10.00
Kodaslide Highlux III 300 W case *	56.50	38.50	25.00
Kodaslide Signet 500 W*	72.50	49.00	35.00
Kodaslide Table Viewer Dt.	97.50	67.50	50.00
Kodaslide Table Viewer 4s	37.50	27.00	20.00
LaBelle 22 Automatic 200 W *	69.00	46.50	35.00
LaBelle 55 Automatic 500 W *	95.00	55.00	40.00
LaBelle 33 Auto Remote 300 W case *	129.60	79.00	60.00
LaBelle 75 Auto Remote 500 W case *	154.95	99.50	75.00
Nord Stereo 300 W*	99.50	69.00	50.00
Revere 444 300 W*	69.50	39.50	30.00
SVE Instructor 300 W slide & strip *	89.50	57.50	40.00
TDC Headliner 300W Semimatic *	49.99	29.50	20.00
TDC Showpak 300W case*	52.50	29.50	20.00
TDC Mainliner 300W Semimatic*	59.50	31.95	25.00
TDC Model D 300W Semimatic*	67.50	36.95	28.00
TDC Streamliner 500 W Semimatic *	84.50	49.50	35.00
TDC Duo 300W 2¼ *	67.50	36.95	28.00
TDC Duo 500W 2¼ *	84.50	52.50	40.00
TDC Project-or View 150W	69.50	47.00	35.00
TDC Project-or View 200W*	77.50	48.50	35.00
TDC Stereo Projector 500W*	169.50	105.00	80.00
TDC Stereo Projector View 300W*	144.50	98.50	70.00
Viewlex V 22C 300 W strip & slide *	86.75	55.00	40.00
Viewlex V33L 300W Auto*	67.00	41.50	30.00
Viewlex V35L 500W*	79.95	47.50	35.00

8MM CAMERAS

	New	Used	Trade-in
Ampro 8 f2.5 Mag g	$143.50	$ 92.00	$ 65.00
B&H 220 f2.5g	49.95	27.50	20.00
B&H 134V f2.5g	89.95	47.00	35.00
B&H 134TA f1.9 Turg	159.95	99.50	75.00
B&H 172 B f1.9 Mag g	164.95	102.50	80.00
B&H 172A f1.9 Mag. Turg	199.95	119.50	95.00
Bolex C 8 f2.8 Yvarg	89.50		40.00
B & H 252 f2.3 Monterey g	59.95	39.00	28.00
Bolex B8 f2.8 Yvar Turg	119.50	79.50	55.00
Bolex H8 Leader f1.9 Turg	259.50	149.00	115.00
Bolex L 8 f2.8 Yvarg	89.95	49.00	35.00
Bolex H 8 De Luxe f1.9 Turg	365.75	247.50	200.00
Bolex 8mm Pancinor f2.8g	219.50	147.00	110.00
Kodak Brownie f2.7g	37.50	22.50	15.00
Kodak Brownie f1.9g	46.75	32.00	25.00
Cine Kodak Reliant f2.7g	84.50	52.00	35.00
Cine Kodak Magazine f1.9g	149.50	82.50	65.00
De Jur Citation f2.5g	$ 77.50	$39.50	$30.00
De Jur Embassy f2.5 Magg	106.95	69.50	55.00
De Jur Fadematic f1.9g	149.50	93.00	65.00
Keystone K-29 Pathfinder f2.8g	49.95	29.50	20.00
Keystone K-30 Capri f2.8g	54.95	34.50	25.00
Keystone K-32 Olympic f2.5g	79.95	46.50	30.00
Keystone K-35 Olympic Tur f1.9g	119.95	77.50	60.00
Keystone Bel Air f2.5 Magg	89.50	52.00	35.00
Keystone Riviera f1.9 Mag Turg	139.95	92.50	65.00
Revere 50 f2.8g	49.50	24.00	18.00
Revere 55 f2.8g case	73.50	44.50	30.00
Revere 88 f2.5g	74.00	33.50	25.00
Revere 99 f2.8 Turg	99.50	54.50	35.00
Revere 80 f2.5g	97.50	46.50	35.00
Revere 84 f1.9 Turg	147.50	84.00	70.00
Revere 67 f2.8 Mag Turg	119.50	59.50	60.00
Revere 40 f2.5 Magg	99.50	53.50	40.00
Revere 48 f1.9 Mag Turg	154.50	94.50	65.00
Revere B61 f1.9 Magg	137.50	81.50	60.00
Revere B63 f2.5 Mag Turg	142.50	84.00	58.00

8MM PROJECTORS

	New	Used	Trade-in
Ampro Futurist 750W case	$149.95	$ 84.50	$60.00
B&H 221 500 W Case	84.50	49.50	35.00
B&H 253 Monterey 500 W Case	99.50	55.75	45.00
B&H Regent 500 W Case	179.95	104.00	80.00
Bolex M-8 500 W Case	169.50	114.00	85.00
De Jur 750 W Case	159.50	84.00	65.00
De Jur 1000 W Cordomatic Case	177.50	105.00	85.00
Keystone K70C Brightbeam 500 W Case	79.90	44.95	35.00
Keystone K80 500 W Case	99.65	67.50	45.00
Keystone K 95 750 W Case	119.50	74.50	60.00
Keystone K109 750 W Splicer Case	159.50	89.50	65.00
Kodak Brownie 300 W Case	62.00	41.95	30.00
Kodascope 8-71A 1000 W	110.00	72.50	50.00
Revere 85 500 W	114.50	59.25	45.00
Revere 90 750 W	125.00	78.00	60.00

16MM CAMERAS

	New	Used	Trade-in
Auricon Cine Voice f1.9g	$ 749.00	$547.00	$375.00
Arriflex 16 (complete 3 lenses)	1990.00		
Bell and Howell Automaster Mag. Tur f1.9		129.00	100.00
B&H 200 f2.5 Magg	174.95	114.50	85.00
B&H 200T f1.9 Mag Turg	244.95	158.00	125.00
B&H 700A f1.9 Tur		149.00	110.00
B&H 70 DL f1.9 Turg	365.50	229.00	175.00
Bolex H16 Leader f1.9 Turg	269.50	157.50	120.00
Bolex H16 Leader (3 lenses compl) g	399.45	238.00	180.00
Bolex H 16 De Luxe f1.4 Tur Octamtr g	486.00	319.00	250.00
Bolex Pan Cinor f2.8 case g	349.50	199.00	165.00
Cine Kodak Mag. f1.9		67.95	50.00
Cine Kodak Royal Mag. f1.9g	169.50	104.50	80.00
Cine Kodak Special II f1.9g Tur	990.00	599.00	400.00
Keystone A-9 f2.5g	99.50	57.50	40.00
Keystone A12 f1.9 Turg	159.50	97.00	70.00
Keystone K50 f2.5 Magg	129.50	82.50	60.00
Keystone K55 f1.9 Mag Turg	175.00	117.00	80.00
Pathe Super 16 Turg	450.00	229.00	180.00
Revere 16 f1.9 Magg	182.50	87.00	60.00
Revere 26 f1.9 Mag Turg	212.00	105.00	70.00
Victor IV f1.9 Tur		99.00	65.00

16MM PROJECTORS

	New	Used	Trade-in
Ampro Imperial 1000 W case	$299.50	$197.00	$150.00
Bolex G-8-16 750 W (8mm & 16mm)	339.50	235.00	150.00
B&H 273A Statesman 750 W Case	199.95	119.00	100.00
B&H 173 Diplomat 1000 W Case	299.95	185.00	150.00
Keystone A82 750 W Case	139.50	76.00	60.00
Keystone K161 750 W Splicer Case	159.50	87.95	65.00
Kodascope Royal 1000 W	240.00	164.00	115.00
Revere 48 750 W	160.00	97.00	60.00

EXPOSURE METERS

	New	Used	Trade-in
Brockway (M3)	$16.95		$ 8.00
De Jur Dual Professional	26.95	$15.50	10.00
GE WD 68	24.50	11.75	8.00
GE PR1	32.50	17.50	10.00
GE Mascot PR30	15.95	9.50	6.00
Leica Meter	24.00	15.75	10.00
Minox	21.45	11.50	8.00
Norwood Director	32.95	16.95	10.00
Polaroid	15.75	9.50	6.00
Sixtar	21.95	15.50	10.00
Weston Cadet	19.95	12.50	8.00
Weston DR w/case	16.50		8.00
Weston Master II Univ	29.95	16.95	12.00

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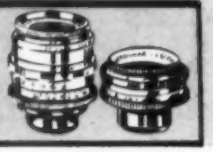

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For Leica, Canon etc.	NOPRI $140.00
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For Contax, Leica etc. (use W/Bellow Housing)	HOBAL $34.50
Bellows Attachment for 2¼" Sq. Single Lens Reflex Cameras	72.50

Please specify model of camera.

Bellows attachment on a double track, to permit minor adjustments without moving camera or subject, permits either horizontal or vertical picture.

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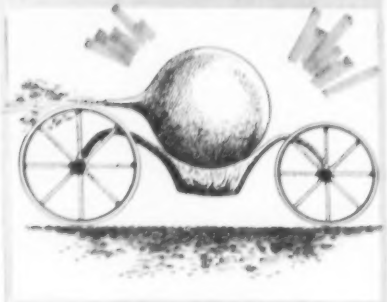

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We asked an independent testing laboratory* to measure the light transmittance of ENTECO and two other popular brands compared to the **recognized transmittance standard**. The results testify to the supremacy of ENTECO:

Manufacturer	Filter Type	Average Transmittance
ENTECO	Type A	**99.7%**
Manufacturer Y	Type A	**91.5%**
Manufacturer Z	Type A	**72.5%**

*Electrical Testing Laboratories, Inc.

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stereo today

by Robert L. McIntyre

Stereo Turn-overs

Systems for taking and showing standard-size stereo pictures seemed to have settled down for a while, but there still is much activity in the sub-miniature stereo field. Tiny 3-D transparencies lend themselves to many commercial uses. The most recent development in this line is a turn-over stereo strip offered by Keith King of Color Film Enterprizes, 1520 South St., Long Beach, Calif.

Each strip contains ten stereo pairs. It is slipped into a special viewer called a 3-D Scope, and the first five pictures are viewed by pushing the film from one frame to another. Then it is removed, turned upside down, and reinserted to bring the next five shots into view. Each frame is approximately $\frac{7}{16}$ inch wide and $\frac{1}{2}$ inch high. The film is unperforated 35-mm Ansco Color. A $\frac{1}{4}$-inch strip down the center is unused by the pictures and provides a place where captions can be put to good advantage.

The printing system was developed by Glen Taylor, Long Beach minister, who become interested in photography through a project for mass producing 35-mm Bible slides. Reproduction is from Realist-size originals, using an automatic printing machine. The cost of the strips is $10 for the first 25 and 10 cents each for additional ones. Viewers, in quantities to match, are 25 cents each. You can get a sample viewer and a film strip that shows how the system works by writing Color Film Enterprizes anytime this month, enclosing 35 cents.

Titles and Pictures

Titles are a "must" if you are thinking of offering your stereo slides in the big exhibitions. It's helpful to think about them, even if you take pictures strictly for your own enjoyment and the amusement of your friends. Pictures for which short, descriptive titles come to mind easily are usually good ones. If titles are hard to think up and run too long to write on the stereo mount, usually it's a sign that the picture itself doesn't tell its own story as well as it should.

How Sharp is Sharp?

Perfect sharpness is the aim of every stereo fan who takes his photography at all seriously. Yet in spite of using tripods, small apertures, and careful focusing techniques we all get pictures that seem to vary considerably in definition. Some shots appear crisp and clear even when they are taken hurriedly. Others, more carefully planned, turn out much less sharp in appearance. This suggests that there is more to sharpness than accurate focusing and avoiding camera movement—and so there is.

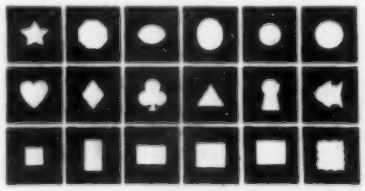
The factor we most often overlook is the inherent contrast of the subject matter itself and the way it is affected by the lighting in the original scene. Things that sparkle and glisten seem almost to look sharp automatically in pictures. Objects that are soft and fuzzy fail to pick up added sharpness. Bright sunlight and clear blue skies produce harsh contrasts in lighting that emphasize sharpness and bring out texture. The soft, even lighting of a cloudy day seems to round off the sharp corners of subject matter and to make pictures seem less sharp even though they contain much detail.

The lens experts used to evaluate sharpness in terms of the number of lines per millimeter that could be resolved by looking at test charts through the lens being tested. Then they found that performance tests did not always agree with results of examination at the optical bench. A whole new system of evaluating lenses for photographic use had to be worked out. We don't have to go through all that to know what our stereo cameras are capable of doing. Merely by analyzing our own pictures we can learn to spot the most common causes of unsharpness when we find it. Recognizing that some of them aren't under our control will make it easier to sleep nights when crisp definition has eluded us in spite of every effort.

Window Trimming

Those unusual stereo masks discussed in this column several months ago are beginning to pop up in the club competitions and exhibits. There are 18 different shapes, as shown in the accompanying illustration. They are made by Joe Simpson's Emde Products, 2028 Stoner Ave., Los Angeles 25, Calif., and are packed in boxes of 102 masks which cost $2.95. Each box contains 3 each of 6 shapes and 7 each of 12 shapes.

All these masks are based on the same window separation as normal projection mounts. They are not designed to hold the transparencies, but merely to sandwich into glass along with a mount that supports them. They can be used with any standard $1\frac{5}{8}$ x 4-inch mounts.



Considerable care must be used in selecting pictures for this type of mounting. Objects can be allowed to project through the stereo window toward the viewer, but it is annoying when things that are nearer than the window distance are masked off. The assorted package seems to be a good idea; you have to play around with different shapes before you can select them well.—

now fans are telling us...

"there's nothing like a LEICA and the latest is the greatest!"

NEW Leica M-3

lifetime investment in perfect photography

Owners of the LEICA M-3 can't seem to find superlatives enough to describe this new camera—the world's most advanced. Among the features they appreciate most are its versatility...its easy operation...its fast handling ...and its many new automatic features. We could repeat more of the fans' high praise about the M-3 but you really should see it for yourself.

E. LEITZ, INC., 468 FOURTH AVENUE, NEW YORK 16, N. Y.
Distributors of the world-famous products of Ernst Leitz, Wetzlar, Germany
LENSES • CAMERAS • MICROSCOPES • BINOCULARS

For the Twin Lens Reflex Fan

Sensational, new SPLIT-IMAGE RANGEFINDER for Rolleiflex, Rolleicord, Ciroflex, Graflex 22, Ricohflex $4.95 ppd.

IN FOCUS — OUT OF FOCUS

Rangefinder is built into groundglass which replaces your present groundglass (we supply complete instructions for this very simple installation, or your local mechanic can do it at a nominal cost), breaks straight lines at an angle until perfect focus is reached. Wonderful for poor light focusing, a 'must' for the many photographers who insist on perfect focus.

A sensational Spiratone Exclusive worth 2½ times as much!

FIELD LENS— $2.00

A flat thin Fresnel ring plate which fits over groundglass in your reflex camera, greatly increasing brilliance of viewing image, making the often almost invisibly dark corner image ten times brighter! No installation—just drop fieldlens onto groundglass. Postpaid. *For Rollei, Graflex "22", Ciroflex, etc.*

MAGNIFYING HOOD $2.95
for all twin lens reflex cameras

Twin magnifier makes possible accurate focusing and composing of entire groundglass image with BOTH EYES and at comfortable distance, while protecting groundglass from glare. Saves eyestrain, helps accuracy, dim light focusing. Instantly removable and collapsible. For Rolleis, Graflex 22, Ricohflex, etc. Postpaid

COMB. OFFER: Magnifying Hood plus Fieldlens $4.59

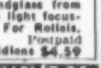
EYELEVEL FINDER FOR ROLLEI $7.95

At last—an expensively finished optical device which shows an right-side up image for easy eyelevel composing and focusing! Clips instantly on and off Rollei hood! Highly corrected optics, all metal construction. Same price for RICOHFLEX model

FREE w. finder: Drop-in fresnel FIELDLENS (no installation needed), for corner to corner groundglass brightness. *Shpg. Chge. 15c*

SPIRATONE BACKS AND RECOMMENDS THESE NATIONALLY KNOWN QUALITY LEATHER GADGET BAGS

Made by one of the foremost manufacturers in the field, and exclusively offered by us, through a special purchase, below or close to the usual wholesale prices. These bags are all brand new first class merchandise not to be confused with "seconds" or "closeouts" of inferior leather bags. Ship. Wt. of Gadget Bags: *4, 6 & 8 lbs.*



SP4. A jumbo-sized, well-made genuine cowhide bag of beautiful appearance. Ample in size — 9"x11½"x14" — for small press cameras and plenty of accessories. Zipper around top for easy accessibility of contents. Roomy inside pockets and an extra large outside pocket. **$10.95**

SP5. A toograin pigskin bag for the advanced amateur or professional, large enough for press cameras (10"x12"x5"), or for taking "both cameras" along. "Wraparound" zipper, flashgun holder, shoulder pad. If you couldn't afford that $30.00 bag, you won't pass up the SP5 at a 54% saving. **$13.95**

SP6. The latest addition to our line, and one of the finest. An oversize genuine cowhide pressbag, 10½"x14"x5", largest size available in gadget bags costing normally $40.00 to $50.00. Adjustable strap runs around bottom of bag—no equipment too heavy for this bag! Inside cover is a batteryease holder. On sides are one large pocket for meter, two small ones for filters. Adaptable inside partition. Back and bottom are fibreboard lined for extra support. We'd bet you'd only expect to pay that little, only for a plastic bag, for the cowhide SP6 is only **$17.95**

135MM TELEPHOTO For ARGUS C-3 $49.95

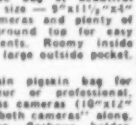
Finally, a 135mm f:4.5 prime telephoto, coupled to the Argus C3 rangefinder and at a price less than shorter telephoto lenses! This coated, color-corrected lens gives more than 7X the area magnification of your normal lens—imagine, a distant object on your screen will be 7 sq. inches instead of 1 sq. inch!

Deluxe Leather Case $5.95

FREE with C3 135mm Lens: Matching 135mm Telephoto Finder, in leather case, and accessory clip—a $9.95 value.

C3—Combi. Offer: 135mm f:4.5 Telephoto, Aux. Wideangle, accessory clip, leather cases and set of matching finders—all for **$69.95**

THREE UNIT REFLECTOR OUTFIT $5.49



Two aluminum 10" reflectors for g1 or g2 bulbs, one bullet reflector for spot effects, all three complete with swivel joint, switch, socket, clamp and cord — at a fraction of their usual cost.

SUGGESTION: 2 g2, 1 g1 photoflood bulbs 86c.

Shipping Weight 5½ lbs.

Only Spiratone offers you this $11.00

PHOTOFLOOD STAND + TWO REFLECTORS FOR ONLY $6.49

The ideal Indoor Lighting Set-up. 3-section metal stand extends to 6'4". Sturdy, braced legs with rubber tips. Stand telescopes compactly to only 2 feet. Positive locking at any desired height. 22" crossbar. Can also be used to hold screen, backgrounds. Two spun-aluminum 10" reflectors (for g1 or 2 photofloods), complete with sockets, switches, 6' cords, bait-socket swivel joints, rubber-jawed spring clamps. Can be used on crossbar or furniture. Complete outfit $6.49.

Shipping Wgts.: Stand 4 lbs. Reflectors 4 lbs.

Suggestions: Two g2 photoflood bulbs ..... $ .66
Extra Clamp-on bullet with bulb (for semi-spot) 1.79

ACCURA REFLEX HOUSING FOR LEICA, CANON $39.95

Ready-to-use, with dual release system

Never before could so small an investment change your Leica, Canon into a single lens reflex camera, ideal for parallax-free close-up, telephoto, medical and scientific work! Focus with formerly impossible fraction-of-inch accuracy through adjustable magnifier on bright, curved groundglass, press release; mirror jumps up, exposure is made of exact image you saw! Use with extension tubes or bellows for closeups, with special 135mm tele lens for complete closeup to infinity range.

Save more still by buying combinations:
- Folding Bellowscope $49.95
- Special ctd. 135mm f:3.5 SUN telephoto 69.95
- Folding Bellowscope and special ctd. 135mm F:4.5 telephoto $73.95

FREE with any combination offer above: New Evelevel Mirror device, a $14.00 value.

ROOF PRISM FINDER for EXAKTA V, VX with RANGEFINDER PRISM $33.95

Latest German import! Replaces the waist level finder, shows unreversed, right side up, brilliant image! Split image prism rangefinder instantly shows correct focus. Roof Prism Finder without rf $19.95; RangerFinder Prism with groundglass, for your Pentaprism Finder $13.95 (no installation needed).

Leather case $1.75. *Shipping Cost 15c.*

Screw-in & Bayonet

Save almost 50%
BODY, REAR & LENSCAPS ea. $1.00
for Leica, Canon, Kine 3 (asstd.)
Exakta, Praktica, Contax S for $2.69

BODY CAPS protect camera body, shutter, when lens is removed. REAR LENS CAPS are a must for all your extra lenses. And FRONT LENS CAPS make perfect seal against any harm to optics, cannot fall off. All caps precision machined aluminum. Available for Sonnar, Biotar, Primoplan, Westar, Tessar, Tridar—be specific when ordering.

Prices on other Front Caps on request

SYNCH YOUR OLD LEICA $3.49 ppd.

for flash or strobe

No installation — just one quick adjustment over release button and you are all set for flash shots at speeds to 1/30th. Tripper accepts standard flashcord—or buy from us with flashgun to fit accessory clip.

Tripper with imported Economy Gun $6.49
Tripper with Fan-type BC Pocket Flash $9.95

Shipping Charge 35c

German-made short-barrel **135mm f:4.5 TELEPHOTO $19.95**
For Leica, Canon, Kine Exakta, Praktica, Contax D, etc

Made to our specifications, this superb coated, color-corrected lens gives a *complete, uninterrupted* focusing range from 16" to infinity, when used with a bellows unit—without the need for adapters or closeup lenses.

FOLDING BELLOWSCOPE with 135mm f:4.5 lens ..... *Shg. Chg. 50c* **$33.95**

SYNCH YOUR OLD CAMERA $2.49 ppd.

Fully adjustable mechanical tripper, requires no installation, works through standard cable release socket of most old cameras! Has fitting for standard flashcord. Allows adjustment for flashbulbs and zero (X) delay for strobe. Tripper with famous make all metal flashgun, gun alone is $6.95 value, has bracket, accepts screwbase bulbs; Bay. Base adapter 39c) $4.95 *Ship. Wt. 2 lbs.*

FAN-TYPE BC POCKET FLASH. $6.95

Shpg. Chg. 35c

Finally, a completely collapsible flash at a down-to-earth price! Sturdy battery case has built-in testlamp, ejector, accepts standard bayonet base bulbs. 6" diameter metal reflector has special pebble finish for maximum reflecting power, instantly telescopes, making entire unit a bare 5" x 2"!

EXTRA FEATURES: Extension outlet—no other flash under $10.00 has it! Standard shoe, fits on accessory clips. BRACKET, for use on any camera, $1.00. Cord available for all Comaur and Kodak synch terminals. For Kine Exakta, Praktiflex FX, Leica M3, Realist, Argus C3, 4, add $1.00. BC battery, last year, $1.00.

FREE! Elegant Zipperpouch, attachable to camera case carrying strap.

POLARIZING FILTER SALE

Ser. V $1.49 Ser. VI $1.98

Look again at the prices: it's almost too good to be true! This most useful of all filters, equally important for color and b&w, at a fraction of its regular value! Eliminates reflections in water, show windows, landscapes; the only skyfilter usable with Kodachrome, Anscocolor, beautifully emphasizes clouds. Made of finest quality neutral polarizing material throughout, to fit standard filterholders. *Ltd supply because model change*

FILTERS are the tools of the photographer—yet, fine filters, made by the best known manufacturers in the country, need not be costly. Each filter is ring-mounted, and engraved as to type.

For b&w: lt. and med. yellow, lt and med. green, orange, haze, red and infra-red.

Ser.	
IV	$1.15
V	1.39
VI	1.59
VII	2.98

For Anscocolor: Nos. 10, 11, 12, UV 15, 16, 17.

For Kodachrome and Extachrome: Haze, Skylight, 2A, 2B, 85B, Type A, Blue 80, 82A, 1D, 2D, 81, 81A, B, C, D, EF.

"About Filters, Closeup and Minus Lenses" is a booklet crammed with valuable info. Send 25c, or free on request with orders of $3.00 or more.

FREE on request: Famous Make Filter Compartment Case with purchase of 4 or more Ser. V or Leather Filterbank with 6 or more Ser. VI filters (incl. polarizing) and closeup lenses. Cases cost regularly $3.50 (Ser. VI), $1.25 (Ser. V)

And, at regular prices, for the new Ektachrome now available: 85C, 82B, 82C.

Shpg. chgs. 1 to 5 filters 10c, 6 or more 20c.

For the Darkroom

ALL-METAL 11 x 14 EASEL $7.69

incl. footswitch

Extra sturdy (net weight 4 lbs.!), solid frame guide on four sides for proper alignment, spring steel masking bands calibrated in inches and mm. Adjustable for all sizes from 1"x1" to 12"x15". White enameled base. Plug enlarger cord into footswitch and you are ready to dodge, vignet and fully control your 'b'ow-ups'.

Combined Ship. Wt. 6 lbs. 8x10 Enlarging Easel, same construction as above, with footswitch. **$4.98**

Famous Make

2¼x3¼ DBL. CONDENSER ENLARGER $21.89

Complete with bulb and lens

You may have missed some fun not doing your own enlarging sooner, but you surely did right in waiting for this buy! Well ventilated metal lamphousing—fine bellows with easy-to-grip focusing knob—built-in red filter—sturdy 13" x 16" baseboard—22" pole permits up to 5x linear magnification on baseboard, virtually any size, if image is projected onto lower level—metal 2¼ x 3¼ negative carrier (2¼ x 2¼, 35mm glassless carriers are available at $2.00 add'l) — achromatic anastigmat 3½" f:6.9 lens gives excellent definition, — can be stopped down to f:11 — double condenser for extra brilliance.

Shpg. Wt. 20 lbs.

Extra lens board with 2" f:4.5 lens, special condenser for 35mm **$11.95**

DEVELOPING TANK

Adjustable

$1.49 *for 35mm, 828, 127, 120, 620, 116, 616*

Simple bayonet lock for different size adjustments. Vents for quick changing of liquids. Agitating rod. Easy loading in darkroom—other operations in daylight. Easily worth double.

Tank with spare reel, $2.39

Shpg. Wt. 2 lbs.

HYPO TESTER $1.00

A hydrometer-type device which instantly shows correct fixing time. Helps eliminate stained prints and wasted hypo. *Shpg. Chge. 10c*

11x14 TRAYS 3 for $4.19

Made of heavy acid-proof plastic, with reinforced ribs, handy pouring spout.

Sh. Wt. 5 lbs.

8x10 Trays 3 for **$2.39**

Sh. Wt. 4 lbs.

ELECTRIC 2-SURFACE DUO-DRIER $8.95

with 3 12x17 ferrotype plates and stand

Yes, Spiratone does it again! A complete, ready-to-use, double surface drier with a capacity of 4 8x10 or 36 2½x3½ prints, singleweight or doubleweight, glossy or dull finish—simply constructed, yet as efficient as units costing several times as much. Works on AC or DC. *Sh Wt 10 lbs.*

SINGLE SURFACE DRYER with 2 heavy duty 12 x 17 ferrotype plates $5.95

Suggestion: Bottle of Ferrotype Polish 35c
Stainless Steel Squeegee Roller 95c

ENLARGING TIMER $6.95

60 sec. range, with second markings. Current shuts off automatically at end of desired time interval. Built-in lock holds knob at desired position, until toggle is released. Adjustable stop for repeat exposures. Manual operation for focusing. Enlarger or printer plugs right into receptacle on cord timer.

Shpg. Chg. 30c

6" All Metal Trimmer 79c

AUTOFILL PRINTWASHER

all metal 12x15" works in any sink. If bought at same time as any darkroom items of $4.98 and up, only **$1.00**

Sh. Wt. 3 lbs.

A fully automatic German import

2¼ SQ. AUTOFOCUS ENLARGER $59.95

compl. w. Double Condenser, Masking Carrier, Footswitch

Rare indeed is so fortunate a purchase we are able to pass on to our customers! This enlarger, made to our specs for the American photographer by the largest German manufacturer enlarging equipment, is readily recognized as a bargain—even at double our low price! Here is why: Sturdy metal construction with easy parallelogram raising mechanism—fully automatic focus to 11" square (from 2¼ sq.), manual focusing to giant 22" sq. blowups—extraordinary double condensing system for more brilliance—precision negative carrier for cut and uncut negatives, with four built-in masking bands for all smaller sizes, easy raising arm—red filter—upper and lower ventilation louvres with lighttraps — 16x19" baseboard w. rubber feet. Shipped Express, charges collect.

Specially Calibrated 3" f:3.5 "Steinheil lens with clickstops, for 2¼ sq. Autofocus enlarger.. **$14.95**

35mm AUTOFOCUS ENLARGER, similar to above, enlarges automatically to 7.5 times linear (56 times the area), manually to 23 times linear, complete with condenser, masking carrier, specially calibrated 2" f:3.5 ctd. Steinheil lens **$59.95**

German ENLARGING EASELS, adjustable, if bought with either enlarger: 8 x 10 $3.49; 11 x 14 $5.49.

Save 50% and more on **ENLARGING LENSES**

We are proud to present three unusual values in brand new, coated, color-corrected, anastigmatic lenses, specially constructed to give corner to corner sharpness in enlarging—at prices half and less than those you'd expect to pay for such fine lenses.

2" f:3.8, Leica thread, for 35mm, clickstops $7.95
3" f:6.3, sliding diaphragm, for 2¼x2¼" $4.95
3½" f:4.5, clickstops, for 2¼x3¼", 2¼x2¼" .. 9.95
5¼" f:4.5, clickstops, for 4x5 ..... 19.95

Shipping Charge 15c

SALE ON BRAND NEW GROUND & POLISHED CONDENSERS

3" Single	$ .98
4½" Single	1.98
4½" Double	4.25

sh. wts. 1 lb., 1 lb. & 4 lbs.

Save $6.00 on 3 Pc.

ENLARGER ACCESSORY SET $3.49

Valuable to beginners and advanced amateurs. Set contains metal footswitch, Enexpo Enlarging Exposure Meter which shows required time for any paper directly on chart, regardless of enlargement size and Test strip maker which helps check accurate exposure and shows where to dodge.

Shipping Weight 4 lbs.

FREE WITH SET: Auto-Tilt 12x15" all metal washer.

CLOSEUPS
are simple and inexpensive, when you buy your closeup accessories from Spiratone, the only firm specialized in low-cost closeup photography equipment.

6-PC. EXTENSION TUBE SET $7.95

for Kine Exakta, Exa
This set contains two precision-fitted brass adapters and four tubes, 5mm, 15mm, 30mm and 45mm, providing the greatest possible range of closeup work from a 3.4 reduction to a 2.2 magnification ratio. *Ship. Ch. 35c*
Same set but with one FOCUSING TUBE from 40mm to 55mm, alone a $10 value. Complete Set $11.50.

4-PC. EXTENSION TUBE SET
for Praktica, Praktiflex FX, Contax, S, D, DA, Pentacon. This exceptionally well-made set includes in addition to the usual 5mm, 15mm and 30mm tubes a 45mm tube, thus permitting up to 2X magnification, when the complete set is used: a tiny object, 1/2" x 3/4" can be made to fill the entire 35mm negative or transparency! *Ship. Charge 35c* **$6.95**
Same set, but with one FOCUSING TUBE, alone a $10.00 value, increasing maximum ext to 100mm. $9.95

The FOLDING BELLOWSCOPE
Available for Leica, Canon, Kine Exakta, Exa, Praktica, Praktiflex FX, Contax S, D, DA, Pentacon
The most useful of lens-to-camera closeup accessories. It weighs only 5 oz., has fine leather bellows and a geared track with a positive lock. A sturdy accurate frame assures proper alignment. An extension range up to 5" is provided, with exposure factors engraved on the track. **$14.95 ppd.**

PROXISCOPE
Geared Focusing Rail
The most useful camera accessory for the practical photographer. Permits minute adjustment in a 4½" range, a "must" for copywork, any kind of closeup photography.
A $7.95 value—available to Spiratone customers at .. **$3.95**
Shpg. Chg. 10c

deluxe COPYING STAND $9.95
Designed by us for use in conjunction with closeup lenses, extension tubes, bellows attachments, to complete with a moderate investment, your closeup and copying equipment. Strong enough for a 4x5", yet compact in storage (two-piece post) and equally well suited for copying, medical, scientific work and movie titling. Camera bracket permits centering of camera over subject. 15x18" baseboard is very practical for large originals. 1½" diameter pole is 38" high. *Shipping Weight 11 lbs.*

Gooseneck Light Attachment $5.95
With C clamps, fits copystand or enlarger pole. 2 bullet reflectors. $1.69 add'l. Ship. Weight 4 lbs.

FREE with orders over $3.00, or send 25c for CLOSEUP DICTIONARY

EXTREME CLOSEUP LENSES
can be used with any camera—with the greatest of ease and with no extra accessories. You can get as close as 8" with a Plus 4, 7" with a Plus 5, 5½" with a Plus 6, 3½" with a Plus 10. You can use two extreme closeup lenses, with a double retaining ring, for even more extreme closeups. With a Plus 5 lens, you can fill the complete 35mm frame when reproducing a postcard; a Plus 10 lens is just right for insects, stamps and coins. Extreme Closeup Lenses make macrophotography possible with a tiny investment. *All mounted in metal rings.*

		Ser. V	Ser. VI
Plus	4	1.75	2.00
Plus	5	1.95	2.30
Plus	6	2.25	2.75
Plus	10	2.65	3.25
Dbl. Ret. Ring		.85	.95

CLOSEUP (Portrait) LENSES
bring within every photographer's reach subjects which would be too small if photographed at the regular 3 ft. closest camera setting: Head and shoulder portraits, children's pictures, copy work—a whole new field of picture taking. All Closeup Lenses are mounted in metal rings. Deluxe lenses, made by nationally famous manufacturer, have diopter power engraved on rings.

	Reg.	Deluxe
Ser. IV		1.15
Ser. V	1.00	1.39
Ser. VI	1.25	1.59
Ser. VII	2.00	2.98

Plus 1 focuses from 38" to 20", Plus 2 from 20" to 13", Plus 3 from 13" to 10"—for versatility, you will want set of all three Closeup Lenses.
Shpg. Chgs., 1-4—10c

MINUS LENSES for TELEPHOTO EFFECTS

If you have a camera using, or capable of using, a bellows or extension tube set, you will want to invest in Minus Lenses for the thrill of taking telephoto shots without buying a regular telephoto lens, or extreme telephoto shots, in conjunction with your telephoto lens; for example, a single Minus 4 lens makes your 135mm telephoto into a 270mm telephoto—varied combinations will produce a variety of effects. Minus Lenses improve the perspective in portraits, too, by lengthening the effective focus length. Thousands of Exakta, Praktica, Contax S and Leica, Canon owners with reflex housings find Minus Lenses most useful accessories.
Minus Lenses are mounted in Metal Rings and are sold in sets of three (of your selection) only. Available in Minus, 1, 2, 3, and 4. Per three
Ser. V ..$3.60 Ser. VI ..4.35 Ser. VII ..6.00
Shpg. Chg. 10c

For the 8mm Movie Fans

CINE TITLER $3.59
Reg. $5.95 Save 40%
Sh. Wt. 2 lbs.
Titles add action, provide continuity for your movies! Yet, making titles is so simple with the Cine-Titler! Sturdy metal construction, auxiliary lens for exact focus. Photograph picture postcards, titles of your own design: you can even shoot animated titles — an instruction booklet accompanies every titler.
If purchased at the same time as Action Viewer, Action or Super-Deluxe Editor
Titler alone $4.64

4-PC. 8mm EDITING OUTFIT $10.95
Famous Make
Save $10.55 on complete
Sh. Wt. 6 lbs.
A value like never before! Outfit contains Projection Editing Viewer, with bulb, pair of rewinds with brakes, all metal splicer, all ready for simple mounting on board or table (not supplied). Can you afford to pass up such a value?

SUPER DELUXE 8MM EDITOR $14.95
Same viewer, rewinds as above, but w. automatic splicer, plus metal base— a $26.00 5 pc. set. *Sh Wt. 6lbs*

8MM PROJECTION EDITING VIEWER
$6.95 You'll more than ever enjoy editing your movies when you use this neat, all-metal, electric editing viewer. It projects a clear image on the groundglass, makes possible viewing from a comfortable distance. *Ship Weight 2 lbs.*

ACTION VIEWER $17.89
Ship Wt. 4 lbs.
A viewer which makes editing a real pleasure, projects brilliant 2½ x 3½" pictures in full action on the built-in groundglass screen—not just one frame at a time, but in continuous motion! Operator can adjust focus to his own vision. Easy to thread, scratch-proof, scientific ventilation of lamphousing — really a blessing for movies fans with a limited budget who know they'd have to spend $40.00 and up for a viewer like it!

4-PC. ACTION EDITING SET $25.95
Ship. Wt. 8 lbs.
If you'd spend 100% more, you wouldn't get a better buy than this 4-pc. outfit. 8mm action editing viewer, drysplicer with built-in scraper, pair of precision machined geared rewinds with fingertip controlled drag brakes and 1200 ft. capacity. This 4-pc. outfit costs actually less than the lowest-priced action viewer would cost alone!

SALE IN METAL REELS AND CANS
8mm: 200 ft. sets 6 for 2.98; 400 ft. sets 5 for 2.98; 300 ft. sets 5 for 2.98
16mm 400 ft. sets 5 for 3.49

½" 1.9 (normal) for mount 8MM LENS $12.95 Plus Your Lens
Whether you own a Keystone, Revere, Cinemaster, DeJur, B&H Sportster or Companion 8mm camera, you can now trade your normal (12½ or 13mm) slow f:2.5, 2.8, 3.5 lens for a brand new, coated ½" f:1.9 lens with click-stops in one foot to infinity focusing mount! You can still set this lens at 10 feet and use its depth of field like a 'fixed focus', but closeups can be accurately focused and distant shots will be sharper, too. When you bought your new camera, you would have had to pay $25.00 or more extra for such a lens! ½" f:1.9 lens without trade-in $19.95
Aux. Wideangle Lens, screws into ½" 1.9, makes a 1.9 Wideangle when needed, only ... $4.95

30 x 40 TRIPOD SCREEN $7.69
Lowest Prices Ever! Portable, Crystal-Beaded

Despite higher steel prices, Spiratone continues to offer you the biggest bargains in screens ever! Same quality as before, and as praised by thousands of movie and slidefans: Crystal-beaded pyroxilyn surface; screen raises and lowers on elevating rod, assuring positive alignment. Metal can has beautiful scratch-resistant finish. Carrying handle sets automatically for balanced carrying. Sturdy tripod is plated and has protective rubber tips. Thousands of these screens are in use, not only by amateurs, but by clubs, churches, colleges as well.

Screen Size	Appr.	Shpg. Wt.
30"x40"	7.69	10 lbs.
40"x40"	9.18	11 lbs.
37"x50"	10.64*	14 lbs.
50"x50"	12.97*	15 lbs.
52"x70"	24.95*	

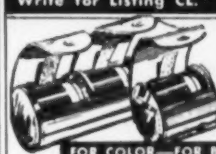
** These screens are shipped by us Express (freight costs collect) within U.S. — other screens P.P. or Express.*
FREE with any screen—20 2x2 COLOR SLIDES or 50 ft. MOVIE FEATURE (state if 8mm or 16mm)

7MM f:2.5 WIDEANGLE LENS for 8MM 17.95
At last—a fine 8mm wideangle lens priced within every movie fan's reach! Covers four times the area of your normal lens, makes movie-taking indoors, of large groups, in limited space or wherever greater coverage and an enormous depth of field are desirable, simple and effective. Chrome finish, click stops, D or B&H mount.
6MM f:1.9, an extremely fast extreme six-element wideangle lens with clickstops, focusing mount 6" (!) to infinity, for the demanding movie fan. Brand new, ctd color-corrected at the low, low price of **$29.95**

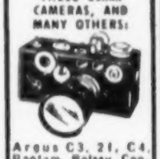
4" (110mm) f:4.5 ZEISS LENS in synch 8 speed shutter $9.95

Here is an unusual value in lenses: 4" Zeiss-Ikon Novar Anastigmat, in front focusing mount, with Klio shutter, 8 speeds to 1 full second, B and delayed action, synch terminal—use it to replace your old lens and shutter, mount it for telephoto work with a 35mm camera—you'll get a first rate optical system in a fine shutter at a fraction of its value. Ppd.

'40% OFF' Clearance Sale of 8mm and 16mm Movie Cameras, Projectors, Telephoto and Wideangle, Tape Recorders—Write for Listing CL.

Spiratone AUX. TELEPHOTO and WIDEANGLE LENSES

FOR COLOR—FOR BLACK AND WHITE
By far the most popular accessory for the 35mm camera owner! Spiratone lenses add to the camera the advantages of telephoto effects for improved perspective in portraits, for moderate distance shots so that the important subject matter will fill the entire negative or slide; and of wideangle effects, for landscapes, and indoors, where space is limited; of greater depth of field.

Universal Finder is matched to your wideangle, normal and telephoto lenses. Ideal for every camera—even without auxiliary lenses, because it provides for much needed parallax correction from three feet to infinity. Available in two models: 50mm for Retina, Argus, Pony, etc., 44mm for Bolsey, Contessa, Signet.

SPIRATONE AUXILIARY LENSES ARE AVAILABLE FOR THESE 35MM CAMERAS, AND MANY OTHERS:

Argus C3, 21, C4, Bantam, Bolsey, Contaflex, Contessa, Edinex, Ediza, Kodak 35, Mercury, Perfex, Retina, Signet, Vito.

SPIRATONE LENSES OFFER THESE EXTRAS:
- Built-in or Separate Filterholder furnished for each (set of) lens (es).
- Interchangeability of standard adapters, so that one lens may often be used with several cameras (each lens is supplied with only one adapter—extra adapters are $1.25 each, when suited.
- Extra hard S-coating.
- Excellent color-correction.
- Lifetime Service Guarantee.
- No change in exposure or lens opening needed.
- Comprehensive instructions for simple use—lenses fit your camera like filterholders, require no installation.
- Availability of filters — your free choice of any TWO with every aux. lens you buy, selected from these: yellow, orange, green, haze, red, blue. Others $1.00 each.
- Availability of MATCHED telephoto and wideangle finders, and a special Universal Finder.
- Telephoto and Wideangle Finders fit accessory clip, can also be used handheld.

Each lens in leather case (incl. 2 filters) $16.95 *Shpg. Chg. 35c*
Set of both lenses, in double leather case (including 4 filters) $29.95 *Shpg. Chg. 60c*
Each Finder, telephoto or wideangle, both for $7.49 $3.95
Universal Finder $8.59
Accessory Clip for Argus C3, easily installed $1.00
Accessory clip, easily glued to most cameras 75¢

GREAT NEWS:
Spiratone aux. telephoto and wideangle lenses, greatly improved, are now available at the same low prices for 2¼x2¼ Twinlens Reflex Cameras—Rolleicord and Rolleiflex bayonet mount (f:3.5 only), Ciroflex, Graflex 22, Ricohflex, Kodak Reflex. For twinlens users seeking a moderate increase or decrease in focus length, Spiratone aux. lenses add greatly to the versatility of their camera, with a minimum effect on coverage and resolution.

4" f:4.5 CTD. LENS in COMPUR RAPID $14.95
Here is your chance to get a new coated, German-made (Spiratone-Hamburg) lens, with diaphragm openings to f:22, in the world-famous Compur Rapid shutter, with 9 speeds from 1 second to 1/400th, B cable release socket and built-in zero delay synch for flash and strobe. Use it on any camera up to 3¼x4¼ (lens is actually designed 2¼x3¼ maximum corner to corner sharpness), for enlarging, adapt it for telephoto work with a 35mm camera, but hurry! *Ship. Cost 10c*

Famous German WIDEANGLE FOR 4"x5" $24.95
in famous Compur Rapid Shutter
Commercial photographers and advanced amateurs alike have waited for just such a buy! Made by Leitmeyr, an old-time German optical manufacturer, the 105mm f:6.8 coated wideangle anastigmat is for the 4x5 press camera owner just "what the doctor ordered". It covers approximately 85 degrees, and one half of the lens can be removed, converting it into a telephoto double the original focus length. The popular shutter has nine speeds from 1 second to 1/400th and B; and built-in zero (X) flash. *Ship. Cost 35¢.*

65MM WIDEANGLE FOR 2¼x3¼ $19.89
Another Leitmeyr-made wideangle lens, 65mm f:6.8, covers about 85 degrees on the 2¼x3¼ negative. Its symmetrical construction permits use of either half of the lens as a 130mm telephoto. Nine speed Compur Rapid shutter goes to 1/500th, has X synch for flash and strobe. Lensboard for Graphic (state model) $2.00
Shipping Charge 25c

All prices include excise tax. Postage and insurance MUST be prepaid, even when no shipping weight is stated—overpayment will be credited in full. Everything listed is brand-new (unless otherwise stated) and fully guaranteed against defects. 25% deposit on C.O.D.'s.
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Magazine loading, marksman finder, 4 speeds and other PLUS features make this a winner! With coated f2.5 lens

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8mm Revere Mag. Turret f2.8 Plus 1½" f2.8 Tele Lens.

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with Carl Zeiss Biotar 58mm f2 pre-set	199.50
with Angenieux 50mm f1.5 pre-set	219.50
with 50mm f1.9 Schneider Xenon fully automatic	249.50
with 50mm f2.8 Westanar fully automatic	169.50
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Bolex H 8 De Luxe f1.9 Tur ¢	247.50
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Keystone K-30 Capri f2.8 ¢	34.50
Keystone K-32 Olympic f2.5 ¢	46.50
Keystone K-35 Olympic Tur f1.9 ¢	77.50
Keystone Bel Air f2.5 Mag ¢	52.00
Keystone Riviera f1.9 Mag Tur ¢	92.50
Revere 50 f2.8 ¢	24.00
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Revere 40 f2.5 Mag ¢	53.50
Revere 44 f1.9 Mag Tur ¢	94.50
Revere 861 f1.9 Mag ¢	81.50
Revere 863 f2.8 Mag Tur ¢	84.00
Revere 88 Spool f2.5	31.50
Revere 88 Spool f1.9	42.50
Revere Ranger Spool f2.5	34.50
Revere Ranger Spool f1.9	39.50
Revere 99 Spool Tur. f2.8	44.50
Revere 99 Spool Tur. f1.9	51.50
Revere 70 Mag. f2.8	41.50
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Revere 77 Mag. f2.5	40.50
Revere 77 Mag. f1.9	46.50
Revere 67 Mag. Tur. f2.8	46.50
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with 50mm f1.9 Meyer Primo-plan lens pre-set	92.50
with 50mm f2 Zeiss Biotar pre-set	122.50
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We have a large selection of used Contax-D & Pentacon cameras in stock . . . all in perfect condition, fully guaranteed . . . also, thousands of lenses and accessories in stock for Contax-S, Contax-D, Praktica, Praktiflex, Pentacon, Hexacon, Rival Reflex, etc. Write for bargain price list.

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Contax IIIA Sonnar f2	381.00	189.50
Contax IIIA Sonnar f1.5	412.00	199.50
Leica IIIF Summitar f2	268.00	149.50
Leica IIIF Summicron f2	336.00	187.50
Leica IIIF Summarit f1.5	357.00	199.50
Leica M3 Summicron f2	447.00	
Leica M3 Summarit f1.5	468.00	
Canon IVS2 Canon f1.8	284.00	159.50
Nikon S2 Nikkor f1.4	359.00	197.50

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35mm f2.5 Angenieux	99.50	56.00
40mm f4.5 Zeiss Tessar	75.00	49.50
50mm f1.5 Angenieux pre-set	165.00	99.95
50mm f1.9 Xenon auto.	169.50	120.00
50mm f2 Biotar pre-set	125.00	65.00
50mm f2.8 Westenar auto.	69.50	54.00
75mm f1.5 Biotar	216.50	99.00
90mm f2.5 Angenieux	84.50	54.00
90mm f1.8 Angenieux	149.50	100.00
85mm f2.8 Travenar auto-set	109.50	59.50
90 mm f4	$ 59.50	$ 28.00
90mm f4 pre-set	64.50	36.50
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135mm f3.8 pre-set	74.95	39.95
135mm f3.5		33.75
135mm f3.5 pre-set	84.95	46.95
135mm f3.5 Travenar auto-set	99.50	54.00
135 f4.5 Steinheil	60.00	37.00
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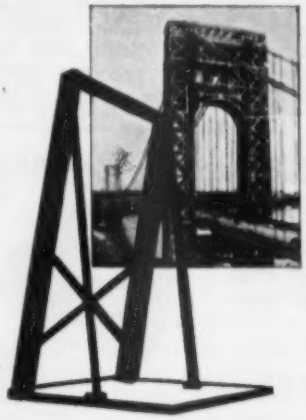

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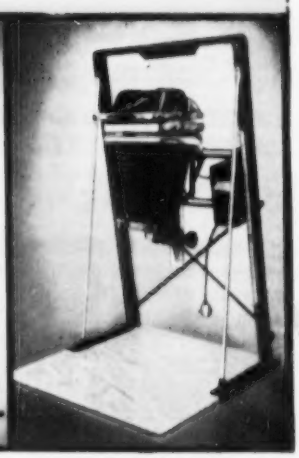

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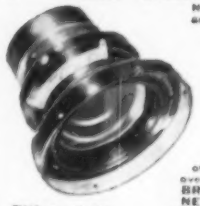

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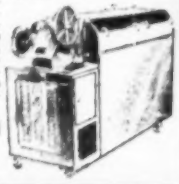

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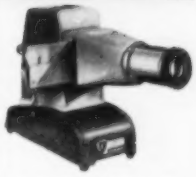

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candid shots by the Editors

This Year's Contest

It's April again, and along with the crocuses and snowdrops comes that other annual spring event—the announcement of POPULAR PHOTOGRAPHY'S $25,000 International Picture Contest; see page 126. This year, as a bonus feature, we're taking up a challenge that's often been flung at us: "How are picture contests run, and how can I be sure of getting my share of the loot?" Bruce Downes has prepared the article *What You Should Know About Prize Contests*, which contains more of the inside stuff on the subject than has ever been assembled in one place before. So now there's practically no excuse for your not winning. Get your entry in early!

Bob Mentken: a self-portrait with pictures around him. (See his work on pages 62-65.) Bob will have a one-man show at the Peter Cooper Gallery in New York, April 1 to May 4.

When to Use Flash in the Darkroom

How would you photograph the partly developed image of a roll of film during development? That's the problem we gave Dan Becker when we assigned him to do this month's article on development by inspection (page 82). To make it even harder, we demanded not one, but a whole series of photographs showing the film at various stages of the development process, just as it appears to the eye by the dim light of a green safelight. Becker decided to use flash, which would utterly fog the film, of course, but not before its images were recorded. So he exposed several rolls identically, of a simple still-life arrangement. Dropping the first roll in the developer, he waited until one-fourth the normal immersion time had elapsed, removed the film, and made his first flash exposure. Ruined: one roll of film. He put another of the rolls in the tank and kept it there for half the normal time, then took another flash picture. He repeated the process at all stages from one-fourth to twice normal development time—and the result was incorporated in our story. It's a handy technique to know about . . . if you're on an expense account!

New Ansco Pan Roll Film

Our hats are off to Ansco for taking still another pioneering step in roll-film progress—a move that is bound to create new enthusiasm for photography among the tens of millions of snapshot makers and "candid-flash" addicts whose only demand is "clear pictures." Briefly, Ansco is switching its amateur roll film from an ortho to a pan standard—the first American manufacturer to do so. As of March 1 this year, Plenachrome, Ansco's general-purpose orthochromatic roll film, has been joined by a new panchromatic roll film at the same low price as ortho film (45 cents for a single 120 or 620 roll). The name of the new film, which will also be available in the 127 and 616 sizes, is Ansco All-Weather Pan.

Main advantage of any panchromatic film over ortho and so-called color-blind (blue-sensitive) films is its sensitivity to all the colors of the spectrum so the various hues of the scene are reproduced in approximately the same relative brightness as they appear to the eye. Reds, lips particularly, reproduce as shades of gray instead of as dead black, so that results look more like detailed "photographs" and less like "soot-and-whitewash" representations when film processing is entrusted to photofinishers. In fact, Ansco has shown us a convincing exhibit of how their new panchromatic roll film has broadened the commercial photofinisher's margin for error when his printing machine operator misjudges the exposure-compensating requirements; also, how the new material has less tendency to produce blocked-up highlights when exposed by a single "flat" flashbulb right beside the camera lens. Ansco Pan is half a stop faster to daylight than Plenachrome—with an ASA exposure index of 64; its tungsten speed, 50, is a full stop faster than Plenachrome's. Its thick emulsion has substantial inherent exposure latitude as an all-purpose roll film should. The new film has a number of additional features that reflect a sound long-range attitude toward the growth of the beginning photographer: the enclosure of a detailed instruction sheet with each package of film; heat-sealing of each roll in a plastic pouch that is impervious to atmospheric conditions; instructions printed on the back of the duplex paper leader; etc.

Ansco Pan film is for amateur use.

(*Continued on page* 122)

Tell Us What You Like

POPULAR PHOTOGRAPHY keeps an editorial finger on your pulse. We want to know your reaction to every article and feature we print: Is it a subject that interests you? Is it well presented visually? Is the writing clear and easy to follow? Do you feel, when you finish, that you've learned something worthwhile? The answers to all these questions fit together to form your general impression of a story. Rate each one in this issue on the checklist below, according to its interest and usefulness to you, and mail to Candid Shots, POPULAR PHOTOGRAPHY, 366 Madison Ave., New York 17, N. Y. Our thanks in advance!

	Superior	Good	Poor
What You Should Know about Prize Contests	☐	☐	☐
How This Picture Was Made	☐	☐	☐
New: The Retina IIIc	☐	☐	☐
Don't Say "Cheese"	☐	☐	☐
Pictures Around You	☐	☐	☐
Make Your Own Slide Titles	☐	☐	☐
Ernst Haas—Adventures in Seeing	☐	☐	☐
Developing by Time and Temperature	☐	☐	☐
Developing by Inspection	☐	☐	☐
The Path of Progress	☐	☐	☐
Color Clinic	☐	☐	☐
Stereo Today	☐	☐	☐

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B-152

what you should know about

Prize contests

Although there is no royal road to victory, there are guideposts along the way, pitfalls to avoid

BACK in 1939, a year after the magazine was founded, POPULAR PHOTOGRAPHY launched its first annual prize picture contest, which, with the exception of five war years, has been held annually ever since. It has become the world's largest photographic contest, more than a million pictures from practically every country in the world having competed for some of the biggest prizes ever offered in photographic competition.

Today POPULAR PHOTOGRAPHY'S $25,000 International Picture Contest (the 1955 announcement and rules appear on page 126 of this issue) has become an institution. Its prize-winning pictures are shown in traveling exhibitions in every state in the union as well as many countries abroad. Through the years it has been a stimulating force in photography and its growth has been accompanied by a mushrooming series of contests, both large and small, commercial and institutional, throughout the USA.

Hardly a week goes by without the announcement of still another picture contest. Recently Don Langer, camera editor of the *New York Herald-Tribune*, devoted a whole series of articles to the subject of contests and estimated that the total value of prizes offered each year runs to more than a quarter of a million dollars. Certainly, contests look like money-making opportunities if not potential bonanzas, although the ratio of winners to entrants must in the nature of things be only a fraction of one percent. This is why every contest is followed by a turbulent wake of disgruntled contestants. The judges, who invariably contribute their expert services free and who bend over backward to render unprejudiced verdicts, are always denounced as numbskulls, and the contest sponsors as swindlers. Yet in spite of the low percentage of winners, most veteran judges agree that the number of really competent pictures entered in most contests is relatively very small, so that the competition is not nearly so stiff as the statistics might indicate.

A corner of the contest room as entries pile up in POPULAR PHOTOGRAPHY's 1954 $25,000 International Picture contest.

To the often-asked question, "What kind of pictures have the best chance in a contest?" there is unfortunately no cut-and-dried answer. If there were a formula there'd be no contests. Like horse races in which the abilities of horses and the skills of jockeys are modified by weather conditions, the moods and well-being of both horses and jockeys, and also the honesty of owners and trainers, the outcome of photographic contests is not only the result of competing photographic skills, but also of the make-up of the group of experts who judge the contest. In the case of some commercial contests, though, you can improve your chances by evaluating the purpose of the competition, which often is to show the sponsor's product in use or in some way to enhance the sponsor's reputation. Study the rules carefully to begin with, and then try to learn all you can about the company, its products or services. Out of such study it is possible to evolve an idea or two for pictures. Naturally your pictures should reflect credit on the company's product or reputation. Ask yourself: What kind of pictures would the sponsoring company want to publish or use in advertising or promotional literature? If the specific product is not involved, make sure the picture is in keeping with the general character of the business.

Is it possible to evaluate the make-up of a panel of contest judges and thus determine the kind of pictures they would be likely to choose? According to Don Langer, not even Univac, the electronic brain, could do that, and he went on to cite the case of an eleven-year-old girl

TEN VETERAN JUDGES TELL WHAT THEY LOOK FOR IN PICTURES

By BRUCE DOWNES

who snapped a picture with her box camera of two small raccoons huddled together in a tree and won a $1,000 cash prize in the National Newspaper Snapshot Contest. "The majority of the judges," wrote Langer, "felt that the picture merited the high award," and then he went on to say that "it is safe to assume that had the roster of judges been changed by even one, the selection would have perhaps been different."

Let's face it. In a contest we're dealing with pictures (which are not measurable by any yardsticks) being judged by men and women with their normal quota of complicated emotions and human failings. With these ingredients the combinations and possibilities are enormous. With five men on a panel of judges anything can happen. No one can predict the outcome. One or two may dominate the rest; one may be too tired to fight for his choices, or another may be influenced by a third whose reputation may be formidable. The weaker characters may be better critics of the art of photography than their more persuasive or louder-voiced colleagues.

Every prize awarded by a group of judges must be the result of a compromise. Only on extremely rare occasions does a single picture stand out as superior in the minds of all the judges. Pictures cannot be measured by any formula, although there have been many attempts to do so. People, including expert judges, have opinions about pictures, and when opinions are in conflict you have discussions and arguments until finally some measure of agreement is found by the majority. The first-prize winner in a large national competition cannot really be regarded as the best, because another jury, or one in which all but one of the members are the same, would most likely choose a different one. What you get is a picture on which most of the judges agreed.

As a contest judge of considerable experience I can assure you that on all the panels I have served the judges have been extraordinarily conscientious in trying to arrive at satisfactory decisions. Their behavior, in fact, has always been remarkably like that of jurors whose verdict could send a man to jail. I have seen a group of tired men who have worked from 9 o'clock in the morning, sweat it out until 2 o'clock the following morning. Such sessions are alive with discussions and arguments, and finally somebody has to give in. A judge holding out for a particular picture agrees to accept second, third, or fourth place for it. The persuasions, compromises, even bullying that go on, and the toll taken by sheer physical and mental fatigue make predicting what a given jury will do impossible. The judges themselves would find it impossible to predict a half hour before the job is done what the final outcome will be.

If it is impossible to predict what a given group of judges will do, are there any other ways of increasing one's chances of winning a prize, any useful hints? Yes, there are.

1) Read the rules carefully. Many prizes are lost by photographers who just didn't take the trouble to read them. The rules will tell you what kind of pictures are wanted. If the contest sponsor is seeking pictures that will depict his product in use, then it would be a waste of time to submit a portrait of Aunt Mary. If the rules say that prints must not be larger than 8x10 or smaller than 4x5, that's exactly what is meant, and the photographer who submits a masterpiece on 11x14 paper has no business denouncing the judges who didn't even see the picture, which was rejected before it reached them. Hundreds of good pictures are disqualified in contests for rule violations. The rules are often printed in small type, but read every word of them, because there is a good and sound reason behind each one, however trivial some of them might seem. Even a small oversight might disqualify a picture. Moreover, for your own protection, keep a weather eye out for the rule that says in effect that all pictures *submitted* become the property of the company spon-

COSTA: At the top of my list is a photograph's ability to evoke an instantaneous response. I find that I react favorably to any subject that appeals to me emotionally. But a picture must elicit this response instantly as an entry seldom has a chance to grow on you later.

DESCHIN: I never really "judge" pictures; I only select what I like. Because I have no prejudices about subject matter, anything goes, just so the photographer does a job with it. If I find that I cannot respond to it . . . then for me it is no picture however perfect technically.

DESFOR: The greatest ingredient in a prize-winning photograph is worthwhile picture content. A successful picture should tell a story or inspire an emotion or reaction in the viewer without the need of reading title or referring to caption. Technique takes the final bows.

FONTAINE: Vitality, excitement, strength! These are the qualities that capture my imagination in the brief moment allotted to each entry in a contest. Above all, I applaud effort. The photographer who can give evidence of disciplined imagination deserves consideration.

HARKNESS: To my mind a judge should throw out all examples of poor technique and all the meaningless, empty photographs. Then he chooses as "tops" those which best combine the expression of the reason for presenting them with a technique which fits the thought.

HILLER: I find it impossible to ignore composition and overlook subject matter in judging pictures. I expect a well-composed picture. If you want to use a photograph to tell a story you should suggest the theme strongly so the viewer can see what it's about.

KEPPLER: I dislike copies of any kind. Just one more scenic shot made from the top of the Mark in San Francisco will get the lowest rating on my score card. As for seagulls, I'd give them back to the refuse they were seeking when the photographers spotted them.

ROTHSTEIN: It should be remembered that a judge of a group of photographs can only pick the best of those submitted. Sometimes the best is not good by any standards. This is a frustrating experience—to be required to award a prize to a picture that wins only by default.

SPECTOR: To arrest my attention initially, there must be rapport between the picture that I'm judging and my experience. This is the ultimate test any picture must meet in any contest. Unless a picture dovetails with some experience of my own, it won't register at all.

SUMITS: For the most part I think a good picture sells itself to a judge instead of the judge deliberately searching for a picture that fits into his philosophy of photography . . . But if a picture has been prettied up I'm more apt to give it the boot than the nod.

TOP PRIZE WINNERS IN RECENT CONTESTS

soring the contest. This means that regardless of whether or not you win a prize you give over all rights irrevocably to the company sponsoring the contest. The sponsor can then use them in any way he wishes.

2) Learn to edit. If the contest rules place no limitation on the number of entries, that's no reason for swamping the sponsor with pictures. In big contests in which thousands of pictures are entered it is quite possible for a good picture to be rejected early in the weeding-out process only because it was submitted in a package of forty or fifty prints and just got lost in the shuffle. This is why it is wiser to edit your own pictures before you send them in. Be very critical, reject all but those you feel sure are good.

3) Don't strain for the unusual or different in subject matter. Originality does not mean freakishness. Most prize winners are of everyday subject matter, photographed with impressive simplicity. Don Langer in his series pointed out that most of the winners of the last three years in POPULAR PHOTOGRAPHY's contest were of subjects available to everyone. Everyday subject matter seen freshly and forcefully has the best chance in most contests today. It is the story-telling, or emotion-packed slice of life that rings most critical bells.

4) Don't imitate subject matter or treatment that has won prizes in the past. Hackneyed subjects get short shrift with most judges, as their statements elsewhere in this article make overwhelmingly clear. Today's prize-winning

Teen-age contests give youngsters a chance to try their wings. A 15-year-old, Mike Roskin, won *Boys' Life*'s grand prize in 1954.

Wistful Boxer won first of $500 in Gaines Dog Research Center's contest. There are many commercial contests like this every year.

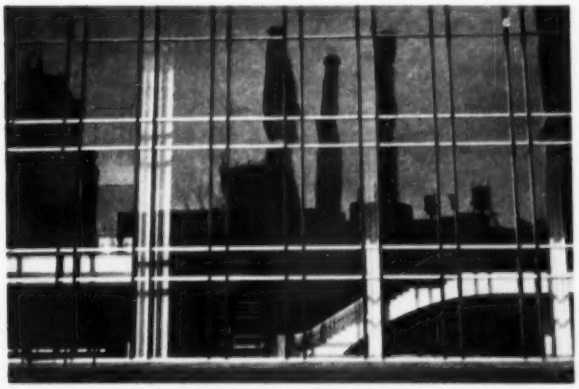
These tips will increase your winning chances

1. Read rules carefully; follow them to letter.
2. Edit your pictures; send only the very best.
3. Don't strain to be different. Simplicity pays.
4. Everyday subject matter stands best chance.
5. Make sure picture theme is clear on sight.
6. Make best prints of which you are capable.
7. Don't imitate prize winners you have seen.
8. Make prints as large as rules allow.
9. Avoid heavily textured paper surfaces.
10. Be sure to identify each print or transparency.
11. Pack pictures carefully to prevent damage.
12. Fill out entry blank fully and completely.

REVEAL VARIETY OF SUBJECT MATTER

A trip to Japan for two was top prize in contest designed to attract people to Japan Trade Center in New York.–This picture won it.

Children in action are favorite winning subjects. This one won a $1,000 grand prize in 1954 Newspaper National Snapshot Awards.



A first prize in the annual Scholastic-Ansco contest went to a Brooklyn High School girl for this interesting reflection picture.

This charming high-key picture makes a simple statement clearly. It won a top prize in Sylvania's *Folks Are Fun* 1954 flash contest.

Multiple exposure won first in American Scene class in last year's Graflex contest.

Story-telling humor scored 1st prize for Maj. Leslie Wood in Interservice contest.

Pet pictures have universal appeal. This one won in Westinghouse flash competition.

IF YOU WANT TO BE A JUDGE CAST YOUR VOTE

subjects may very well be tomorrow's judge-boring clichés. Bill Sumits of *Life*, a frequent contest judge, says that awards go to innovators, not imitators, Victor Keppler deplores the prevalence of pictures of sea gulls, and Sy Spector, the *New York Journal-American's* camera editor, reminds us that "contestants should keep in mind that change is the only constant element in photography and consequently in contests and judges of contests."

5) Technical quality, needless to say, should be as high as possible although in recent years many prize-winning pictures have not been models of technical perfection. This has been the result of a violent reaction against the old salon standards in which technical consideration finally took precedence over picture content. Like all reactions this one probably went a little too far, for it is unfortunately true that over the last five years some of the best and liveliest photographic talents have been careless of technique. However, the picture that boasts only technical perfection and meticulous composition, which would have won prizes ten years ago, doesn't rate a second look with any but old-line salon judges today. Veteran judge and critic Jacob Deschin, camera editor of *The New York Times*, says that after he has been moved by a picture, he examines the print further for its technical qualities. "If these lend strength," he says, "then all the better; if they weaken the effect, I still like it, but will place it, by comparison, lower in my estimate than the print that has as good an idea technically well expressed." The better the technique, the better the picture, but beware of too much technique and too little picture.

6) What about prints? Must they be glossy? Single- or double-weight paper? Mounted? When these questions are not specifically answered in the rules, it is generally safe to make your prints on paper that (*Continued on page* 124)

The pictures on these pages are the top black-and-white prize-winners in Popular Photography's last six annual contests. Which one is best? *You* be the judge by casting your vote. We'll print the result in a forthcoming issue. If you want to keep the page intact, a post card will do.

① **Moroccan Peasants by Esther Bubley 1954**

④ **Oyster Dredging by A. Aubrey Bodine 1948**

THIS IS YOUR BALLOT

I vote for picture No. .....

Name .....

Address .....

Scene class in last year's Graflex contest. Maj. Leslie Wood in Interservice contest. one won in Westinghouse flash competition

FOR THE BEST OF THESE PRIZE WINNERS

② My World is Growing by W. Starr Suydam 1950

③ Boys by Leon Levinstein 1952

⑤ City Child by Farrell Grehan 1953

⑥ Ring-Bills at Gull Island by David M. Stanley 1951

THE NEW 1955 POPULAR PHOTOGRAPHY

$25,000 INTERNATIONAL PICTURE CONTEST

IS ANNOUNCED ON PAGE 126.

Photographic stopper shows same teacher in six different places at the same time. See story end next page for full details on technique.

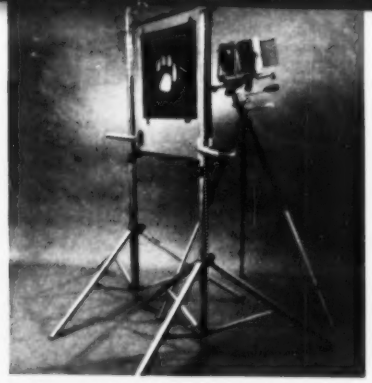
How this picture was made

HERE was an assignment that looked impossible. It was to show *in one picture* how busy a teacher can be in a whole day. Not only did it seem impossible at first, but it looked impossible to the readers of *Life* Magazine when it appeared.

Bill Sumits, chief of *Life's* photographic laboratory, and photographer Dick Meek did the ground work for this assignment. Dick tried the "masking-off" technique to see if the same person could be photographed several times on the same negative with natural results. All of his testing proved that it could be done. It was up to my assistant and myself to smooth out Dick's results, and get the finished picture.

Our shooting location was a grade school in Bay City, Michigan. We packed up our equipment, got on a plane, and were in the classroom of Miss Ethel Howard the next day.

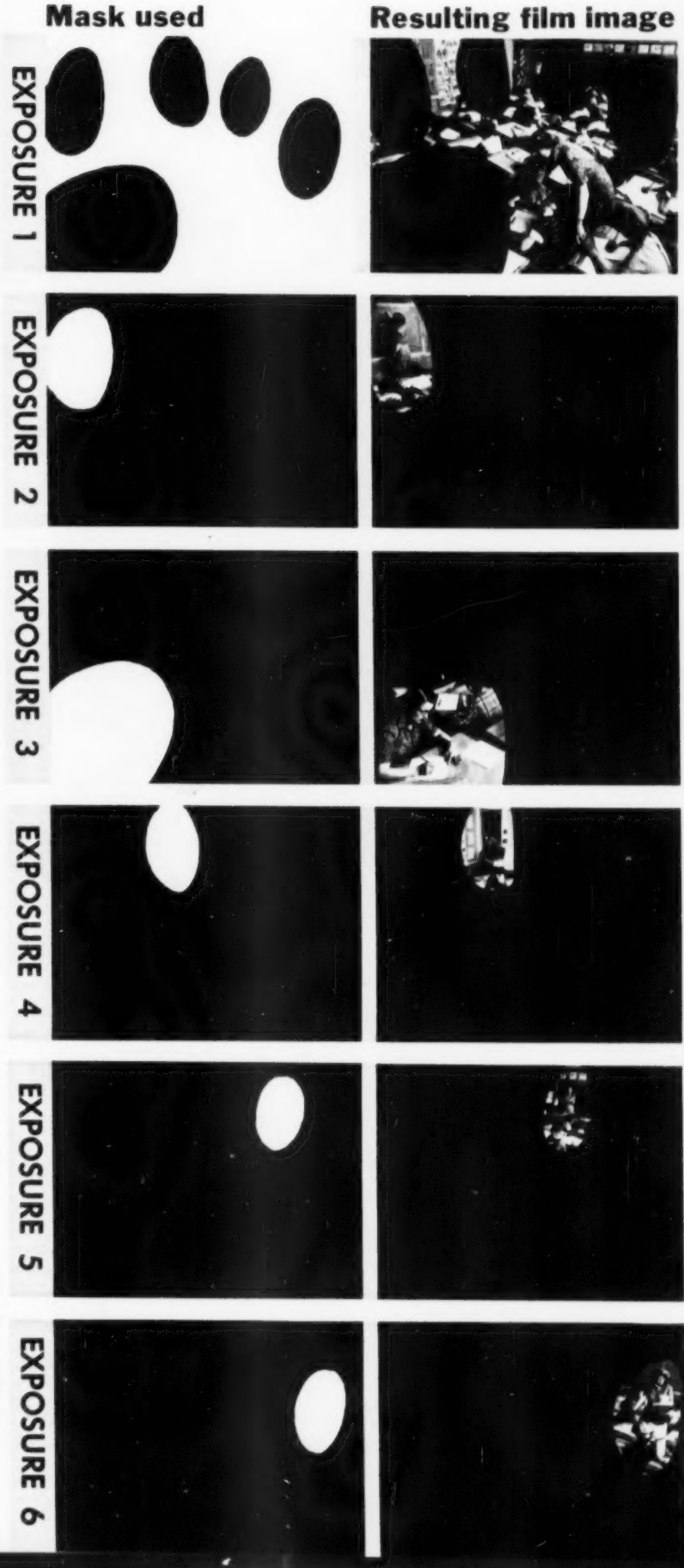
After deciding that the best shooting position would be from a corner of the room that had no windows, we began solving our problems. Our thoughts and



Equipment (above) used in making multiple exposure shot includes plate glass 1/16 inch thick, stands, clamps, black paper masks, 5 x 7 Deardorff camera with 4 x 5 back, and 4-inch wide-field Ektar lens. Basic mask, shown here, has holes in it for five of the positions where teacher appears. She was recorded in sixth position during first over-all exposure. For all exposures setting was 1/5 second at f/8. Canopy was built over camera and glass plate so stray light would not create ghost images.

→

Here is a description of each mask used on plate glass and which areas were recorded on the film during each exposure. **EXPOSURE 1:** Over-all exposure with teacher in foreground leaning over student. Five pieces of the mask were on glass holding back areas where teacher would appear later. Children were told to take comfortable positions and sit absolutely still during entire shooting period. **EXPOSURE 2:** With all but upper-left circle masked off on glass, exposure was made for teacher writing on the blackboard. **EXPOSURE 3:** Mask in lower-left corner was taken off to get record of teacher at her table. **EXPOSURE 4:** At door, teacher pushed the piano. **EXPOSURE 5:** Moving to her left, she stopped at desk assuming another position. **EXPOSURE 6:** Last position was near student with teacher looking at paper.



By RALPH MORSE
LIFE Staff Photographer

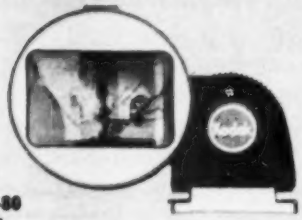
our resulting solutions were as follows:

On Lighting. Floodlighting or any other artificial light would look unnatural in a class room so they were counted out. Plenty of natural light came in through the windows. Since we had to make a multiple exposure, lighting had to be the same in the room for each exposure. We (*Continued on page* 120)

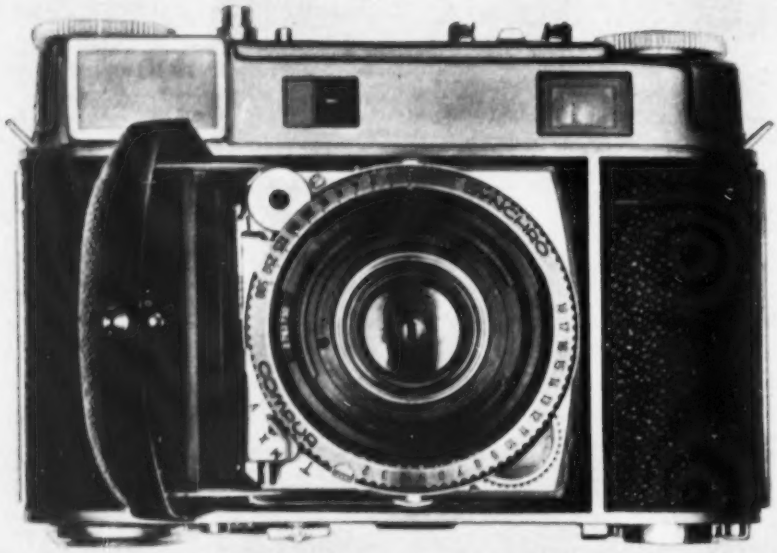
new: the Retina IIIc

we preview a revolutionary camera featuring

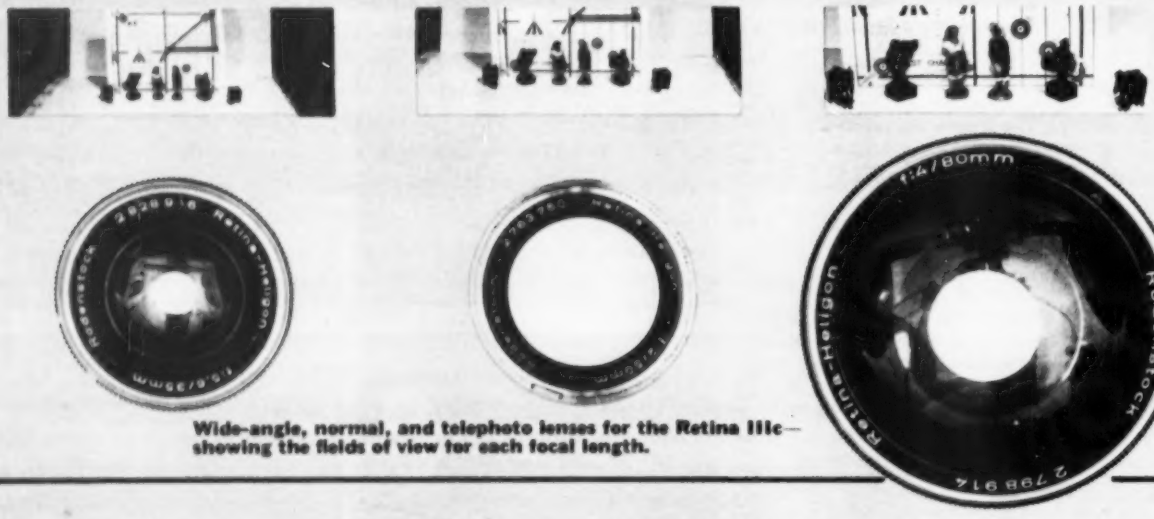
interchangeable lenses with a between-lens shutter



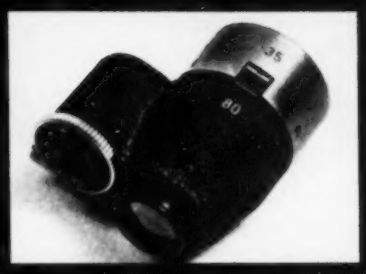
Kodak Retina 35–80 optical viewfinder



Retina IIIc, rear lens element alone



Wide-angle, normal, and telephoto lenses for the Retina IIIc—showing the fields of view for each focal length.



Optical viewfinder must be used to show the fields of view for the 35-mm wide-angle and 80-mm long-focus interchangeable lens components—built-in rangefinder couples with normal lens, indicates manual-focus settings for long and short focal-length components. Knurled button on top of finder flips forward to show proper field for wide-angle lens, to the rear for the long-focus lens. A calibrated wheel provides manual compensation of parallax error. Finder fits into accessory shoe on top of camera.

Three-way light meter is built into the camera body, calibrated in light-values for direct use with the Retina's Synchro-Compur shutter. For low-level *reflected-light* readings, a metal hood over the sensitive cell is raised—for reading in bright-light situations, hood is snapped closed, the light reaching the meter through a small opening in the hood. For *incident-light* readings, a separate plastic cover is snapped on over the cell.

Thumb-action film advance and shutter-cocking lever has been relocated in the new Retina to the bottom of the camera body for greater convenience—camera can be held in picture-taking position while lever is worked. The advance mechanism includes a clutch device to disengage the shutter from the film counter, so a partially exposed roll can be returned to its cartridge, later wound out to the last previous exposure without cocking shutter each time.

Retina C interchangeable lens system is demonstrated in photo of front element of normal 50-mm f/2 lens being removed from camera's bayonet flange. This lens is composed of six elements, three permanently mounted behind the Synchro-Compur shutter. Front lens group is removed with slight twist—supplementary lens groups inserted to form 35-mm wide-angle f/5.6, 80-mm long-focus f/4 lenses in conjunction with fixed rear group. Camera cover closes only with normal lens in place—plastic cases are provided for the other lenses.

ONE of the most interesting news items at the 1954 Photokina in Cologne last April was the set of interchangeable lenses developed by Rodenstock and Schneider for Kodak's projected series of Retina C cameras. Made at E-K's Stuttgart works in West Germany, the 35-mm Retina had been noted for its compactness and for the ease with which its between-lens Compur shutter could be synchronized for all types of flash illumination. The unusual design of the three-piece Heligon C lens set made by Rodenstock and the comparable Xenon C unit made by Schneider fulfilled the promise of interchangeable wide-angle, normal, and telephoto optics with a single between-lens (Synchro-Compur) shutter permanently mounted on the camera.

Last summer when the first Retina IIIc cameras, fitted with Heligon C lenses, appeared on the European market, POPULAR PHOTOGRAPHY obtained a complete outfit from a retail store for close examination and casual field testing. Now that limited quantities of the Retina IIIc are available in the United States (equipped with Xenon-C lenses), we are happy to share our observations with our readers.

The new camera is studded with interesting features. In addition to lens interchangeability described in detail below, it offers the new Compur "light value" shutter with lens diaphragm coupled to the shutter-speed control; a built-in (but not coupled) three-way light meter calibrated in light values; a single-stroke rapid-film-advance lever at the bottom of the camera body; a single-window rangefinder and viewfinder with a brilliant diamond-shaped rangefinder image in the center of the viewfinder field; a double-length viewfinder base permitting scenes to be centered in a white-line frame, superimposed on the picture field; a metal focusing helix in place of the traditional Retina bellows, with a baffled interior to eliminate internal light reflections, and still other features.

The camera is not new in basic appearance. It still can be identified as a Retina by any of the faithful users of this 20-year-old miniature camera. To the discriminating eye it appears slightly larger, with a more-rounded body. The fold-to-close mechanism has an excellent locking device to keep the camera body from being closed while the lens is extended beyond the infinity setting. The fast film loading feature that Retina users have long enjoyed is still standard. (*Continued on page* 117)

Don't say

That old formula draws a grimace oftener than a smile. Hollywood pro Earl Leaf *has a technique that insures the real thing everytime he shoots*

THERE IS SUPPOSED TO BE a magic word for photographers, one that will change a deadpan scowl into a flashing smile, and make an appealing portrait out of unpromising material. The word: "Cheese!"

In theory, you're supposed to be able to win fame and fortune with any old camera plus the mystic formula, "Say cheese!" It's an old chestnut, maybe the oldest in photography's bag of gimmicks. Seldom does it really get the desired result, but it never fails in one respect: it always produces a fine picture of somebody saying "cheese!" If this is what you want, okay. But if you are after real spontaneity and honest-to-goodness smiles, let's look elsewhere—at the work of Earl Leaf, for instance, who made the pictures on these pages.

It takes a really accomplished actor to produce an authentic laugh, smile, giggle, guffaw, chuckle, or side-splitter.

But you're not shooting actors. You're trying to photograph your wife, your girl, or the nice old lady next door. You have to take your smiles where you find them. What to do? There are four general approaches: (1) take her into a situation that is a natural laugh-producer; (2) tell jokes yourself; (3) sit and wait until she smiles, then shoot; or (4) forget the whole thing and shoot her deadpan.

Number One is best, of course, if you can manage it. A party is a great place for light-hearted informal portraits, and any situation involving children or animals is likely to bring smiles to the straightest face. Number Two isn't as impossible as you might think, but don't overdo it!

Number Three sometimes works unexpectedly. You sit staring at each other until the ridiculousness of the situation strikes you both, and you burst out laughing together. Number Four, of course, is a last resort, an admission of failure, and unworthy of discussion.

With these wise words, and the example of Earl Leaf's fine pictures of happy people, you should be all set. Ready now? Say "cheese!"—▶

Ice-water treatment is guaranteed to produce a spontaneous expression. Here baseball pro Jim Baxes watches as Mary Anne Such lowers her podex into a mountain stream. No amount of coaxing could have put that mouth on her.

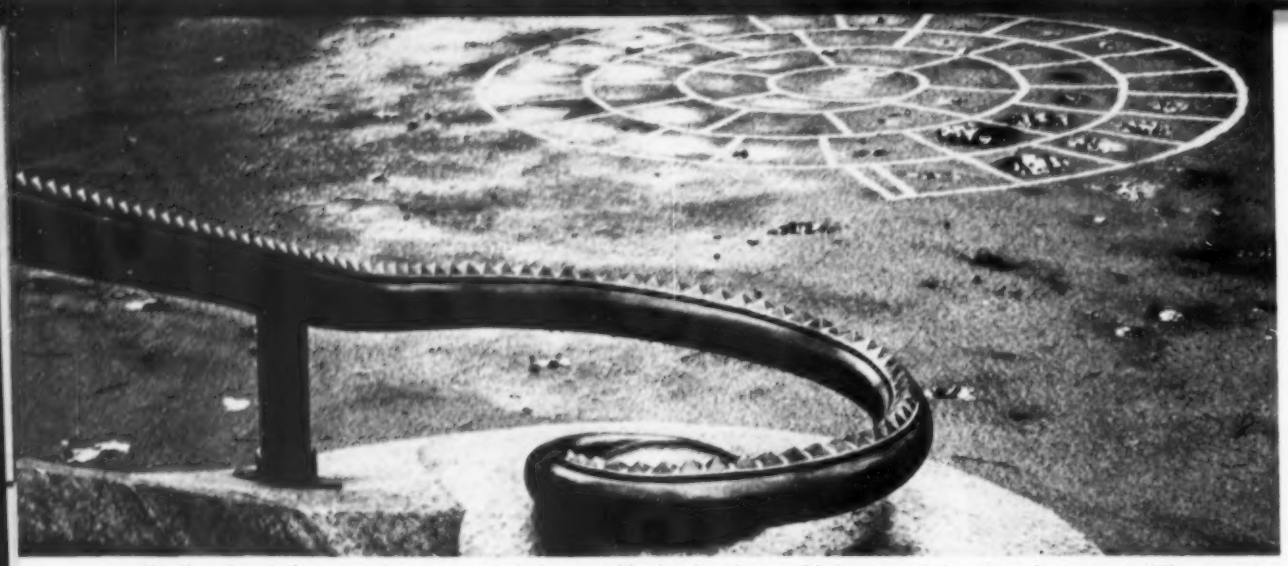
Even four-legged dogs pant for Marilyn's kisses. Josepha, her pet Chihuahua, almost made it this time. Here is a case where only fast candid shooting could have caught the *orbicularis oris* at the exact instant!

'cheese!'

Slightest provocation will bring forth a belly-buster from some risible individuals. With this type, it's usually just a short wait between laughs. Keep your camera primed!

Billboard, or toothpaste, smile is commonest among hungry models and unsung starlets. Main concern here: avoid being bitten.

Reptile's dental hygiene is typical of stunt situations cooked up by press agents for pretty girls (or homely alligators). Take advantage of them by catching a truly revealing expression, like the one displayed here by Tawney Fancer for Earl Leaf's lens.



Mentken found these complementary spirals in a neighborhood park near his home, and shot them from several different angles.

Pictures around you

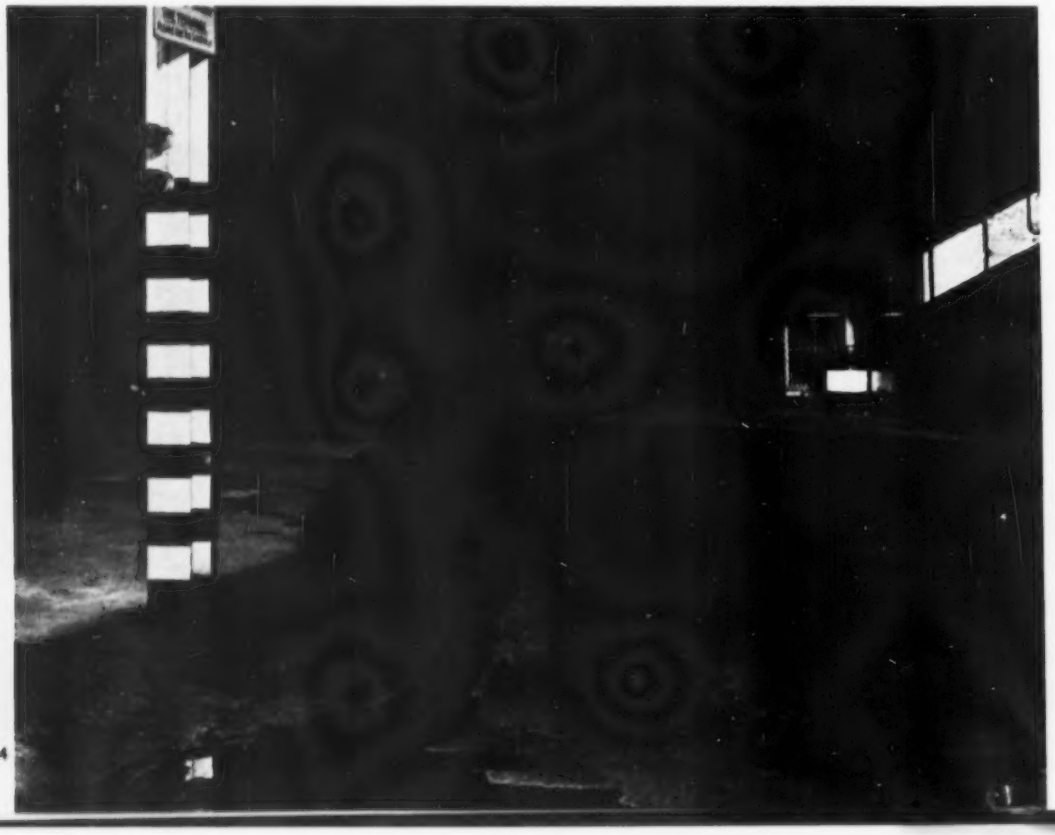
BOB MENTKEN is a young graphic artist for whom the camera, like pen and brush, is an instrument for interpreting the world around him. His pictures reflect an untiring interest and imagination in dealing with commonplace subject matter. In his work there are no leaping tigers, no smiling celebrities, no impudent children. His world is the familiar one; he never travels far for pictures. Many of his best have been made within a few steps of his uptown Manhattan apartment. Mentken the photographer is interested in form and design—the same form and design that concern Mentken the artist at his desk in the advertising agency where he works. But there is more to the pictures than a for-

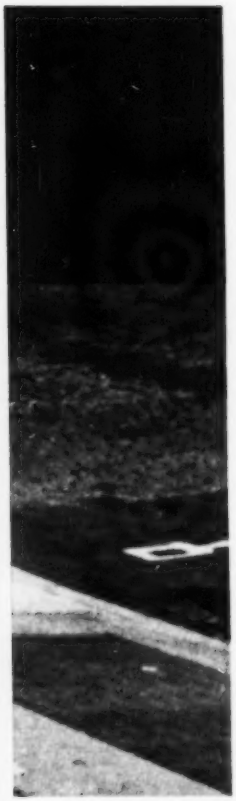
Lowering his camera until roof-edge obscured most of skyline, Bob made cloudy sky dominate this red-filtered cityscape.

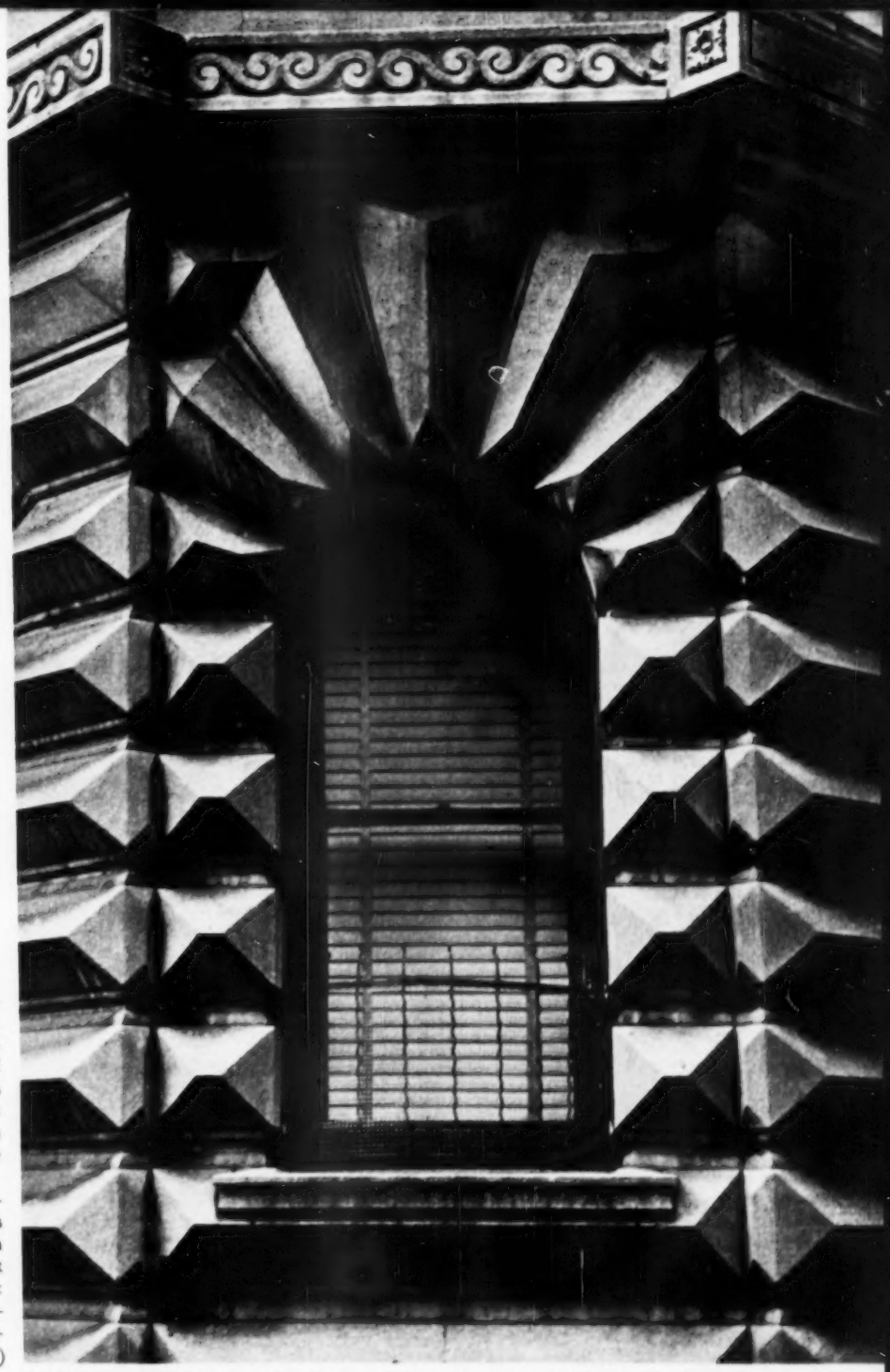
A block from home. Bob noticed the symmetry of this apartment building courtyard, and laid the camera on its back for the shot.

Blackness of background drew Mentken to this spot. He was pleased when somebody came by to "animate" the picture.

Farther from home, Bob made this picture at New Jersey side of 42nd Street ferry. Shafts of sunlight dramatize darkness.





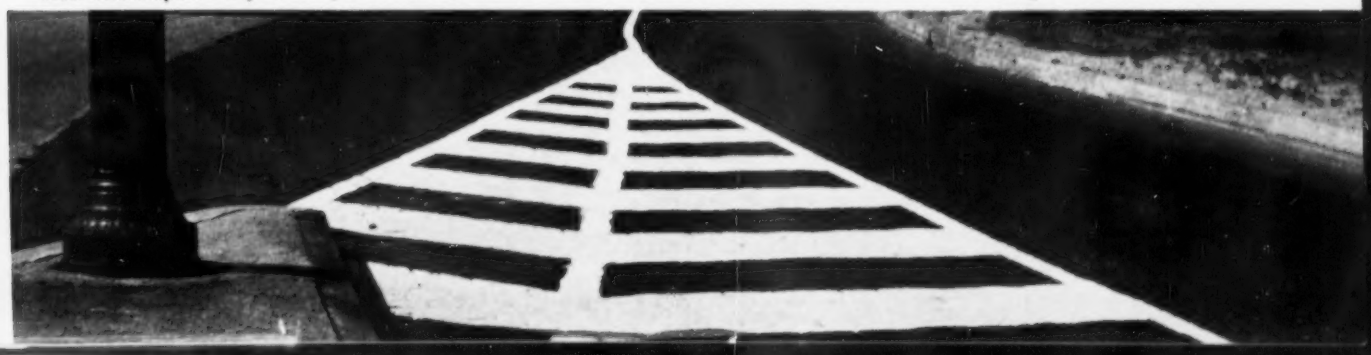


tunate discovery of nicely arranged lines and shapes. There is a human element, though there are not often people in his pictures. In these images of a city, of masonry and steel and concrete, there is a kind of calling card from the men who built the buildings and lived in them: "Was here; couldn't wait. See you later."

Why this preoccupation with the ordinary? "People have asked, 'Where was that taken?'" says Bob. "This reaction suggested to me a theme which I felt could be quite interesting and unique: the translation of my own ordinary surroundings into a dreamlike, out-of-this-world series of (*Continued on page* 116)

Shuttered window in a stone facade, a block from his home, drew Mentken's attention.

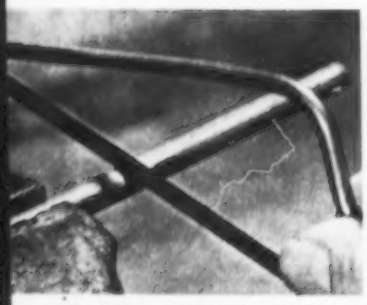
Most commonplace subject in city is a mid-street traffic island. This shot shows how Mentken uses "selection of angle" as a creative tool.



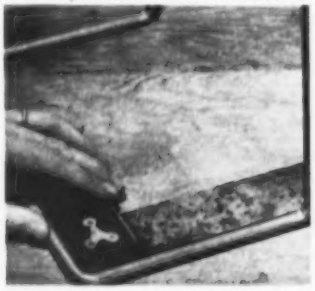
Make your own slide titles

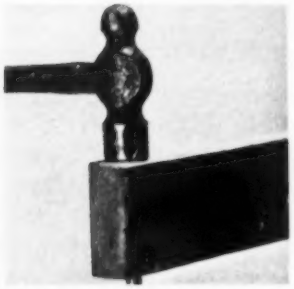
They're easy and fun to do

By JOHN I. FISH
Photographs by the Author

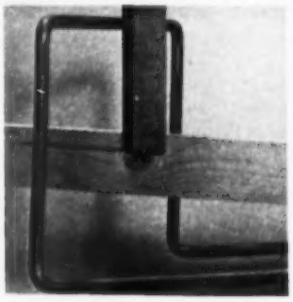


Aluminum or iron rod of proper length is cut to exact size (see chart in latter part of this article) and marked for bending. Clamp rod in vise (left) with mark 3/16 inch out from jaws. Start bend with monkey wrench, finish with hammer.





Right angles are carefully checked with a square (left). Compare others to drawing shown in chart. Drill (center), same diameter as rod, is taped to insure even depth of holes bored in base cut from ¾ x 2¾-inch hardwood; base is approximately two inches wider than the frame itself. Gently hammer base onto rods (right).



Alignment check: Put camera on base in vise, clamp a board across. Mark line where lens axis falls, about half the frame height (left). Insert screws for camera position, drill bolt hole (right). Attach case for convenience.

THERE'S NO black magic needed to make effective title slides, either 2- or 3-D, and the whole family can join in the fun. Elaborate equipment isn't necessary. All you'll need is a focal frame which you can buy or make yourself (directions given above), a title set, finger paints, or construction paper, and a dictionary or the ability to spell correctly. Your family and friends will get more enjoyment out of a group of slides introduced and identified by imaginative titles.

TITLE SETS

There are two general types—the raised plastic letters, usually white in color, such as Mitten's Display Letters, and the flat variety, which possess an electrostatic charge, thus enabling them to cling to any smooth surface, such as Clingtite Letters. The latter type is fairly new and has unlimited possibilities. These letters are easily fastened to suitcases, refrigerator doors, mirrors, TV screens, windows (to identify a scene outside), or just used in the conventional manner to spell out a title on a colorful background.

The raised plastic letter is usually enhanced by a low lighting angle for maximum shadow effects. Background material may be gaily colored construction paper, finger painting, or better yet, a large reproduction of the spot the title is about. This can be from a magazine, a calendar, or one of your own black-and-white photographs.

FINGER PAINT

It may have been a long time since you last finger painted, but don't worry about the lack of experience—it is easy as well as loads of fun for the whole family. It's such a flexible medium that even the nonartistic get the "feel" of it in a moment, and it represents just about the simplest method there is for producing your own "custom" title slides.

Many stationery and all art supply stores carry a commercial set of finger paints. But you can make your own with materials from the kitchen. The recipe calls for flour mixed with enough water to make a consistency that will spread well but not run. Add food dyes to create the desired colors.

The secret for successful finger-paint slides lies in (*Continued on page* 132)

See movie section for additional uses

Movie title sets, consisting of flat or raised plastic letters and symbols, are available at art and photo-supply stores.

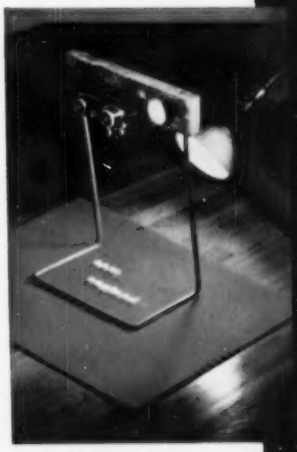
Flat plastic letters cling to smooth surfaces; on a suitcase (left) to introduce vacation slides; on a refrigerator (above).

On-the-spot signs are most convenient titles to photograph. A family member can be added for interest and variety.

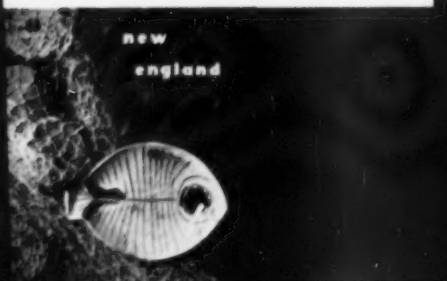
Finger painting on clear glass offers a wide range of titles. Sets are sold at art stores or made from kitchen materials.

Raised plastic letters on plain or colored backgrounds utilize low-angle lighting for simple but dramatic titles.

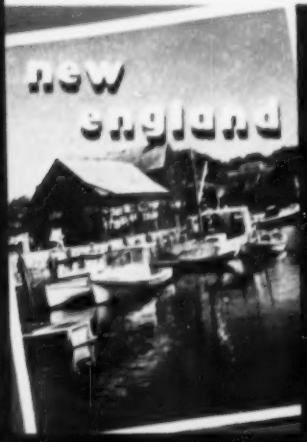
Cutouts of construction paper traced from magazines make simple but effective titles. Details, where necessary, are painted on.



Focal frame is shown in use in a vertical position. It is steady enough for a 1/10-sec exposure.



Souvenirs, indicative of the spot you visited, are combined with letters and finger paints done on glass or paper. **Backgrounds** of calendar art or your own black-and-white prints combine with raised letters for a professional touch. →



See movie section for additional uses

Ernst Haas

The Thames, London

Pigeons, London

The Nile, Egypt

—adventures in seeing

5th Avenue, New York

3rd Avenue, New York

Ruins, Egypt

Coca-Cola, Egypt

→

By BOB SCHWALBERG

Haas' early pictorial phase is typified by this view of Salzburg on a foggy November day in 1946.

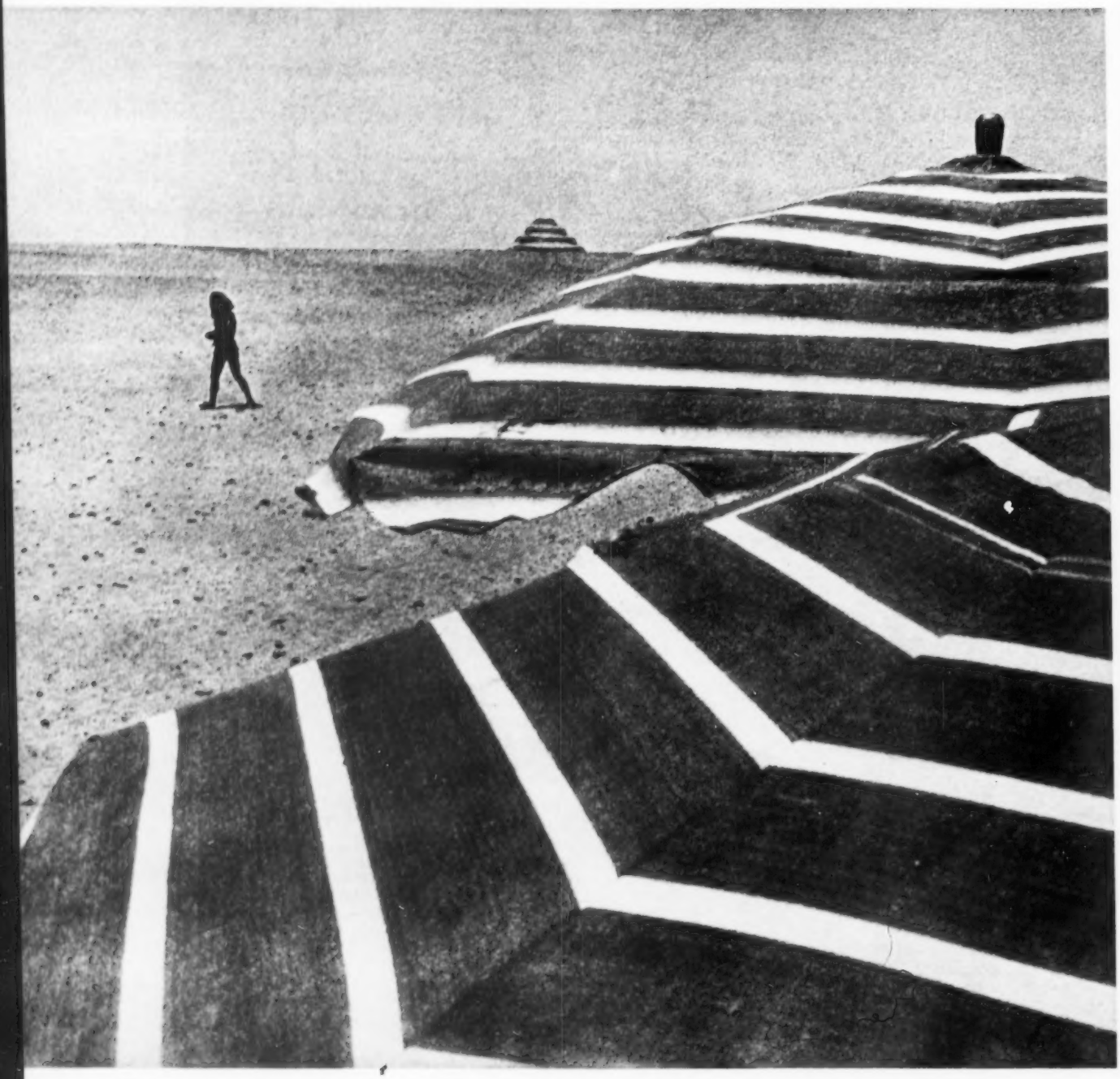
The work of Ernst Haas is a rare blend of photo-journalism and pictorialism, a sensitive reporter's concern for truth, and an artist's eye for composition. Here's the story of this young Austrian's career to date

Early reportage, also shot in 1946, was Haas' dramatic and widely published picture story on homecoming Austrian PW's.

UNUSUAL COLOR PICTURES on the preceding three pages show Haas' sophisticated sense of design and ability to see unexpected relationships between apparently unrelated objects. (Notice in particular the four London and New York pictures.) Girl in burnoose, left, is American starlet and model, Ivy Nicholson, photographed on location in Egypt. Haas uses Kodachrome film for most of his color work, and rarely bothers with filters of any kind. Incredibly enough, Haas, now famous for his color photography, had exposed only one roll of color film previous to shooting his New York series.

NINE YEARS AGO several pounds of butter were bartered on the Viennese black market for a Rolleiflex camera when a former medical student, art student, dramatics student, and junior assistant movie director named Ernst Haas decided to make photography his life work. Haas' pictures now appear regularly in such leading American magazines as *Life*, *Vogue*, *Holiday*, *Ladies' Home Journal*, *Argosy*, and *This Week*, and his cameras are obtained through more regular channels.

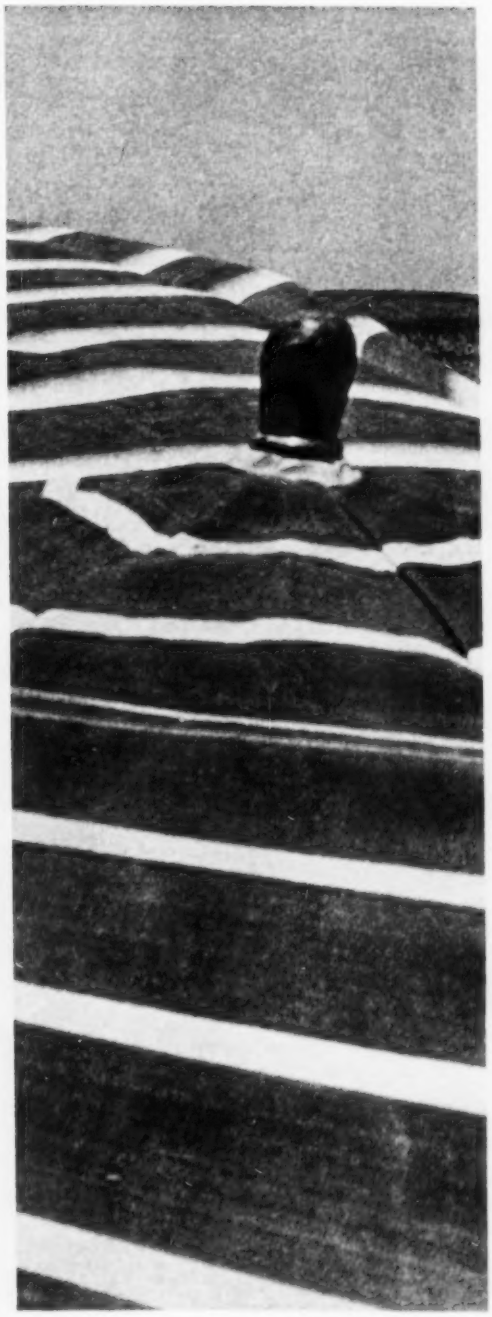
A man of many parts, Haas' camera-for-butter transaction was not his first contact with photog-

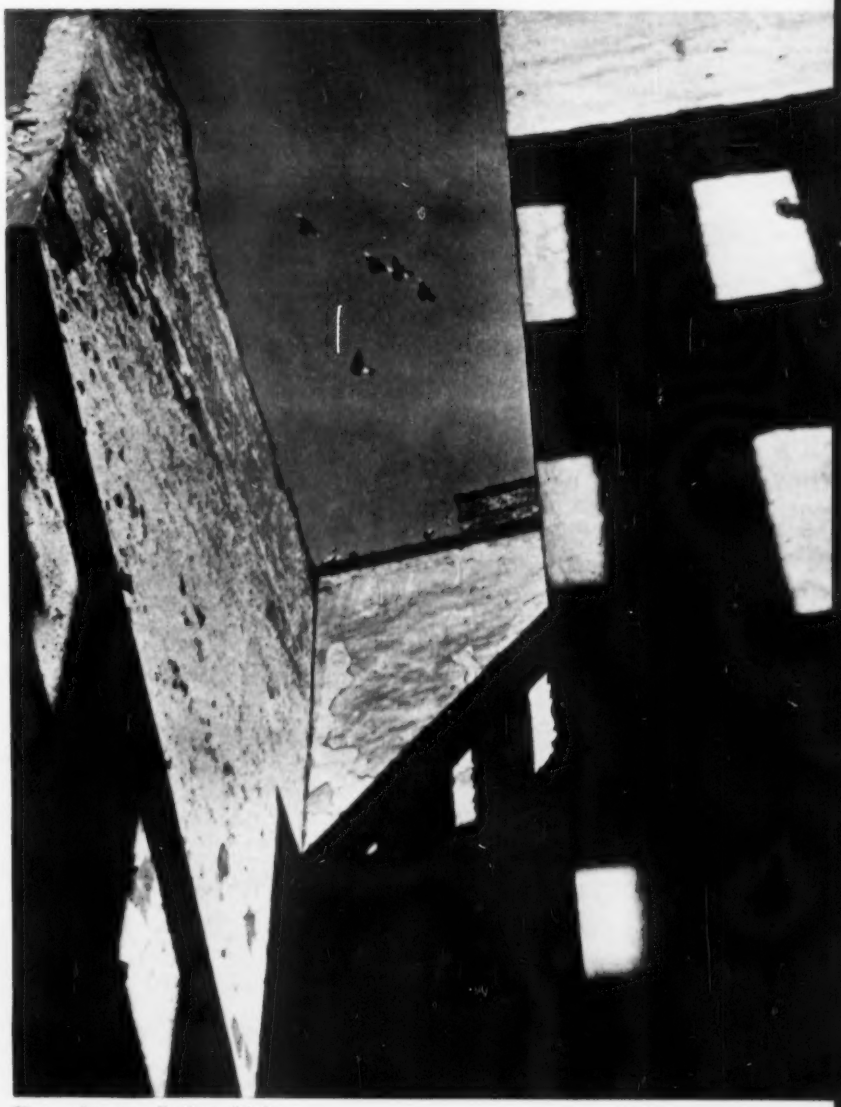


World-traveler Haas finds startling compositions everywhere he goes

raphy. As a teen-ager before World War II he had developed a fine dislike for photography, which he found overly complicated, too technical, and considerably less satisfying than painting or sketching. As a matter of fact, Haas never did think much of photography until shortly after the war, when he edited and printed a portfolio of war photographs made by his father, a sort of Austrian David Douglas Duncan of the first world war. Working with his father's old glass plates produced the realization that photography might just have its possibilities as a creative medium.

Shortly thereafter, Haas was se-





Five pigeons flutter high above war ruins in Vienna.

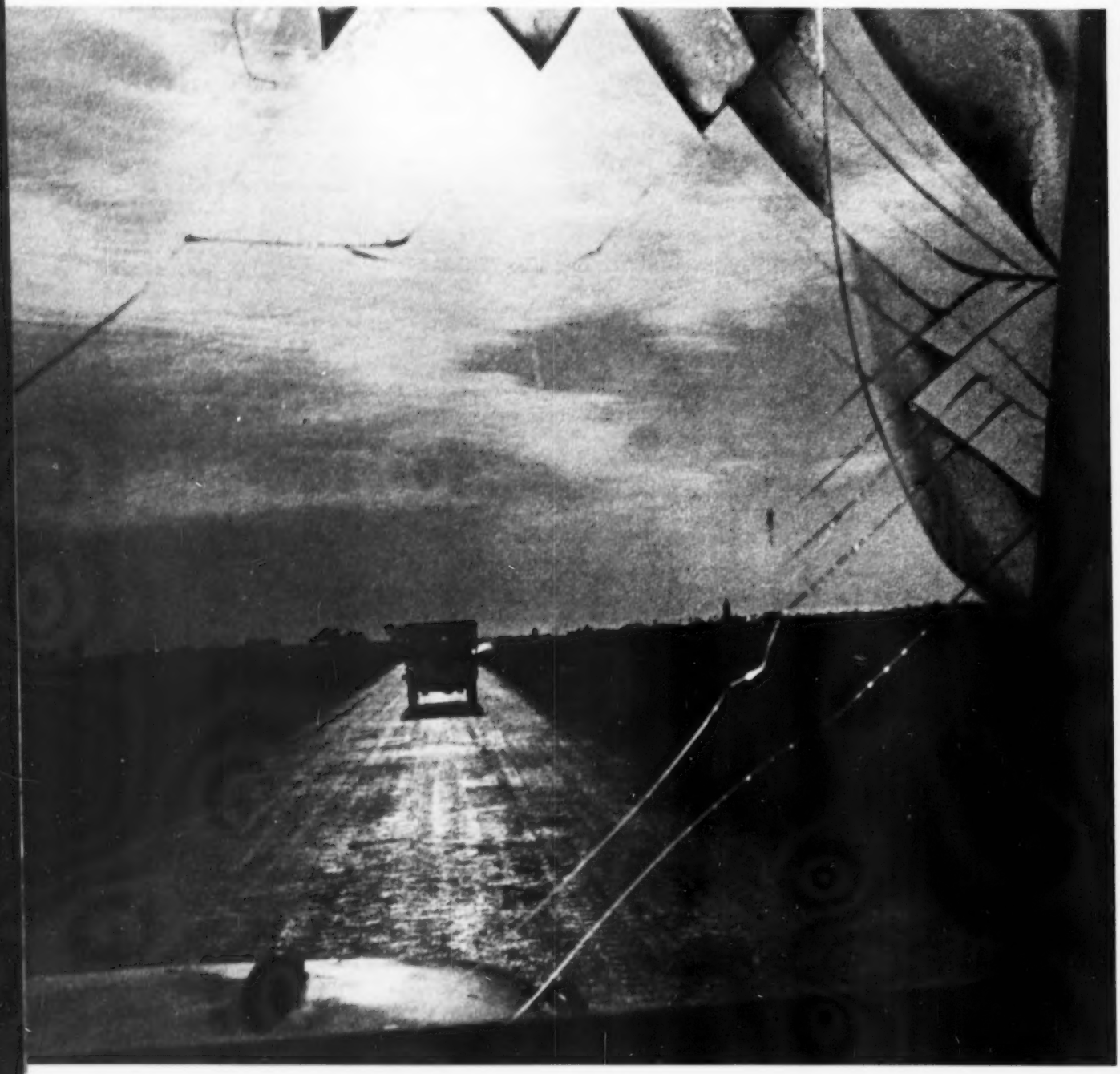
←

Foreground umbrellas repeat form of a distant pyramid.

→

In Italy, a grotesque figure carries bundle of wood.

duced by a glittering miniature camera which he purchased solely because of its gorgeous appearance. Now there was no turning back, and Ernst soon found himself enrolled in Vienna's Graphische Lehr und



Haas is highly sensitive to the mood-evoking power of natural light

Versuchs Anstalt as a student of photography. Placed in the second year because of his self-training, Haas rapidly earned the disapprobation of his instructors, who finally expelled him. The faculty admitted that from a practical point of view Haas was perfectly capable of making good pictures but they deplored his absolute inability to grasp the fundamentals of photographic theory. Ernst has a simpler explanation. "They threw me out because I could never keep the hypo out of the developer," he insists.

Following this experience, Haas, armed with his theoretical background and the Rollei, set to work

Two pigeons, one reflection make interesting design in a London puddle. Haas' special technique: "Get your model by feeding it."

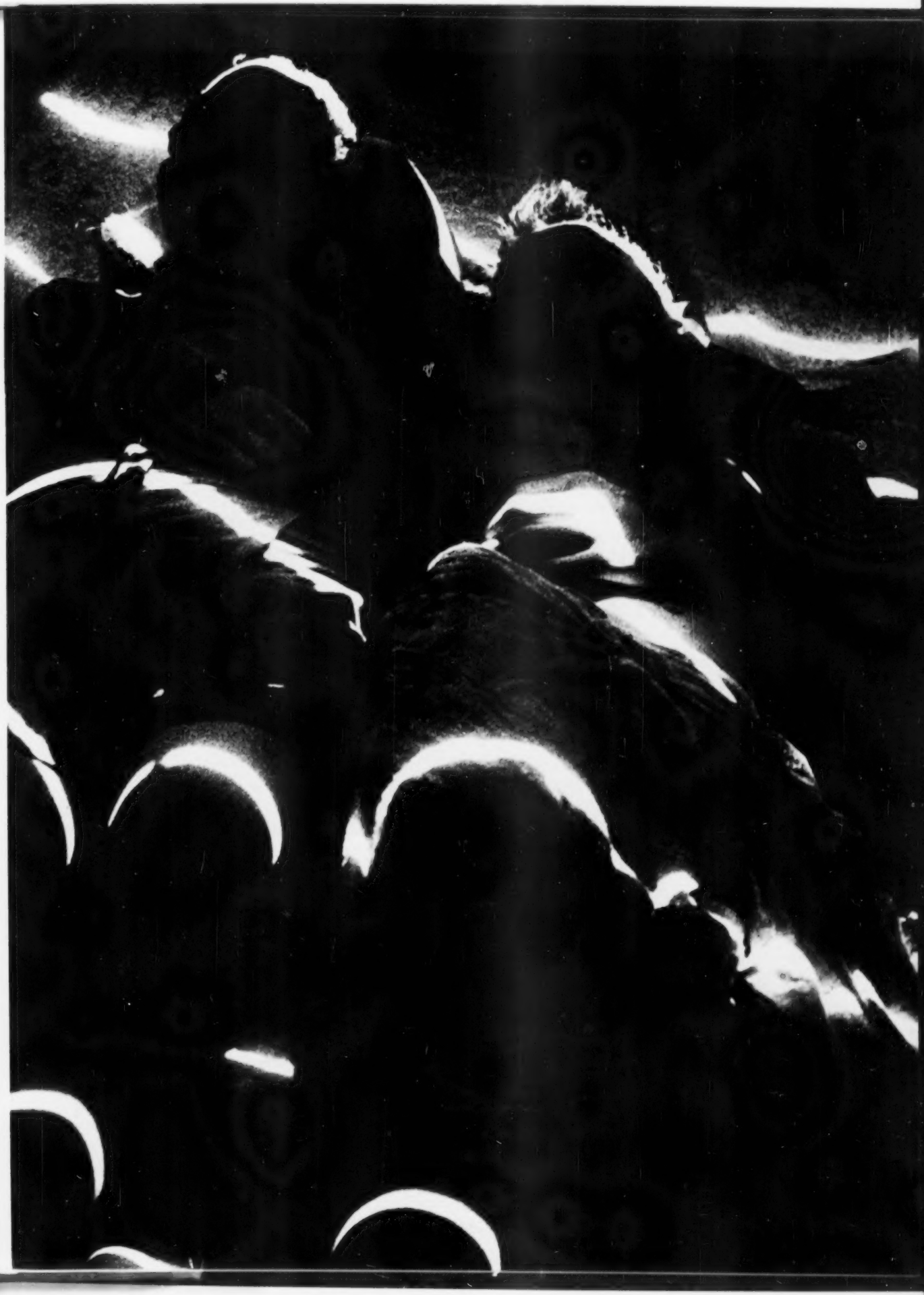
←**Setting sun** casts ominous light on mined road near Phuly, Indochina. Fellow Magnum photographer Bob Capa was killed near here.

Slanting light, low angle produce weird view of rain-splashed Buddha.

undaunted. Carefully studying the leading pictorialists of Europe and America he decided: "This is what I have to beat." In an incredibly short period of time he assembled an extensive portfolio of romantic pictorials, arty abstractions, and weird design patterns, and promptly entrained for Switzerland to show his work to Arnold Kubler, editor of the internationally famous magazine *Du*. Mr. Kubler was less than

Blazing bars of sunlight cross the bodies of sleeping Egyptians in the eye-stopping picture on next spread.

→



Woman on a Marseilles street corner was photographed with a Contax and a wide-angle lens. Exposure: 1/100 sec, *f*/6.3.

Haas also is skilled at making informal, unusually-composed portraits

impressed and remarked that in 1936 Haas' portfolio would have been mildly interesting, but not in 1946. "Go back to Vienna and photograph the way your people live in these troubled times," he counseled.

Kubler also showed Ernst some of the work of a young Swiss photographer, the late Werner Bischof, and advised him to see Bischof. The impact of Werner's pictures was so great that Ernst put his portfolio together, never to show it again, and caught the next train back to Vienna. He would like to meet this Bischof, but only after he had achieved some meaningful and worthwhile photographs of his own.

Back in Vienna Haas turned toward the real world and began to document the misery and the privation that are the aftermath of war. Single unrelated pictures soon lost their charm for him and he began to shoot sets and then complete picture stories. The first picture story he did was about the charitable activities carried on at St. Stefan's Cathedral and it actually sold to a now defunct Viennese picture magazine. His work also had attracted the attention of the editors of *Heute*, a picture magazine published both in Germany and Austria by the U.S. Department of State.

Heute became Ernst's real school. Film was still very expensive and very scarce, and the budding photojournalist had to shoot whole stories on two or three rolls of Rollei film. Covering an assignment with only 24 or 36 negatives was a tough, frustrating discipline, and Ernst feels, the best possible training for a beginner. Haas' *Heute* assignments were many and varied, and he began to receive frequent fashion assignments.

At first fashion interested him, but this rapidly wore off. One thing that may have contributed to this

Portrait of Ivy Nicholson, photographed against a backdrop of foliage, has the grace and elegance of a Renaissance painting.

was the fact that the models would almost always appear lacking stockings, hats, handbags, or vital unmentionables which Ernst would have to buy for them. "They thought that since I was doing fashion I was rich. I wasn't," he recalls.

One day, instead of doing an assigned fashion job Haas covered the homecoming of Austrian prisoners of war liberated by the Russians. "When I saw this scene of men coming home after so many years, some with relatives waiting for them and some without, and especially the mothers and fathers begging for news of (*Continued on page* 112)

Choreographer George Balanchine was recorded by available light.

1 Consult makers' film-developer instructions before processing. Above, a wall chart.

2 In total darkness strip paper backing from film. To avoid fumbling, keep processing tank and reel nearby.

3 Load film onto reel, handling only by the edges. With center-loading reel, keep the film slightly buckled.

4 With outside-in-loading reel, push film onto reel gently but firmly. Reel must be very dry to avoid jamming.

By BORIS DOBRO, FPSA, FRPS
Instructor at Brooks Institute of Photography, Santa Barbara, Calif.
Photographs by Jack Krivdo and Wilbur Beam

Roll film development

time & temperature

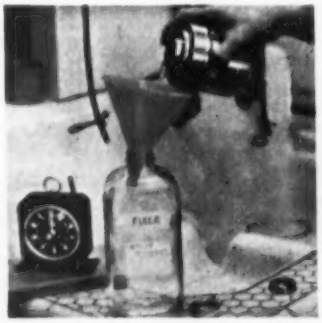
IN TEACHING successful roll-film developing techniques, we must keep in mind the single goal of all photography—a good print. We must be able to see details in the highlights as well as in the shadows. A good negative must show the same qualities in the corresponding areas. There should be a slight layer of silver even in the thinnest parts of the negative, and even the darkest parts must have some degree of transparency. (Completely blank areas in the negative will print as black, unrelieved areas without details. Opaque areas will result in blank, white areas on the print—"washed-out, blocked-up" highlights). Since almost every scene we are likely to photograph will contain both dark and bright areas, we must learn to control the contrast between these two extremes, so that both are printable. The Time-and-Temperature developing method herein described offers an effective means for getting the kind of negative you want.

In order to increase our understanding of successful roll-film developing, the definitions of *density* and *contrast* are of importance.

Density is the measurement of the varying layer of metallic silver covering the film after development. The longer the exposure the more silver will be formed on the film, and the *denser* the negative will (*Continued on page* 134)

13 While development is in progress, adjust water flow for intermediate rinse at same temperature as developer.

14 When timer indicates development is over, pour solution into "Old Developer" bottle, using funnel.



19 Replace cover, pour fixing bath into bottle labeled to indicate number of films processed, age of solution.

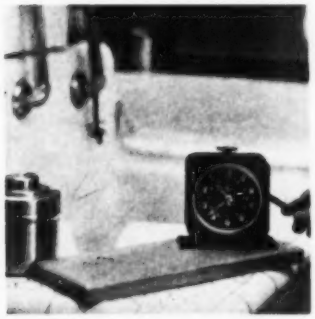
20 Film is ready for final wash. Place in container similar to this coffee can with holes punched in bottom.

5 When reel is securely loaded, place in tank. Make sure cover is on firmly. White lights may now be turned on.

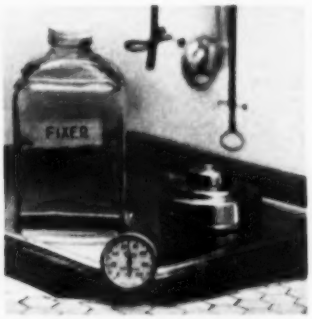
6 Check temperature of fresh developer before starting. Optimum processing temperature is within 65-70 F.

7 Pour developer into graduate, tank capacity indicated on side for correct volume of solution.

8 Tip tank slightly and pour in premeasured developer slowly, steadily, to avoid air bubbles.



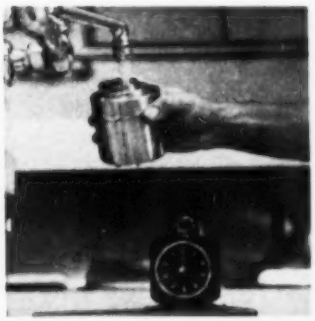
9 Start interval timer promptly for accurate development. Timer should be set before pouring solution into tank.



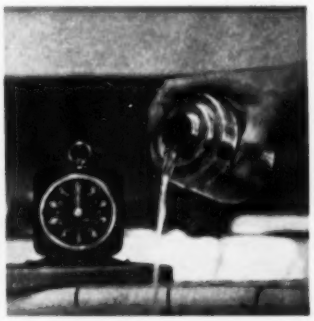
10 Place tank and bottle of fixing solution in water bath at 68 F to maintain correct processing temperatures.

11 Method, frequency of agitation must be uniform. Here circular motion is used to mix solution.

12 Some tanks are agitated by rotating reel with a spindle, twirling at even rate, both directions.



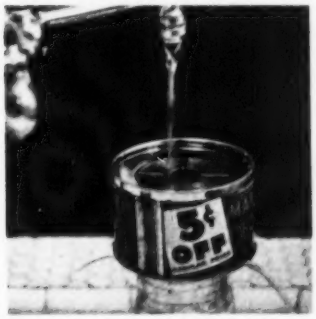
15 Rinse film under prestabilized water flow for about 10 seconds, agitating the tank for a thorough job.



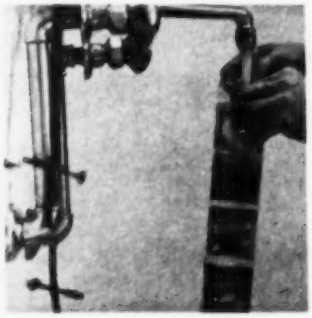
16 Pour out the rinse water; fixing solution should be poured in immediately to avoid water spots on film.

17 Fixing solution is poured into tank inclined slightly for quicker, cleaner pouring. Now set timer.

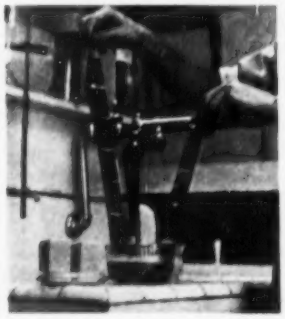
18 When fixing is over, remove cover before pouring out bath to be sure the process was effective.



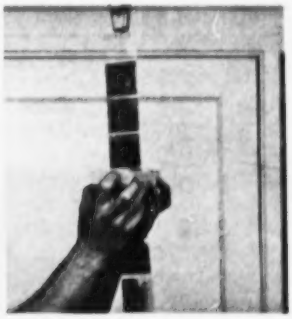
21 This way the fix flows directly out, without danger of settling at bottom of tank. Stabilize rinse water at 68 F.



22 Wash is complete after 30 min at 68 F; swab film gently with cotton in running water to remove any sludge.



23 To shorten drying time and avoid spots due to uneven drying, immerse film in a wetting agent.



24 Final step is to remove surface moisture by drawing two viscose sponges slowly down film.

Roll film development

by inspection

These two filters make it possible: dark red (far left) for orthochromatic films, and dark green (left) for panchromatic

By DAN BECKER

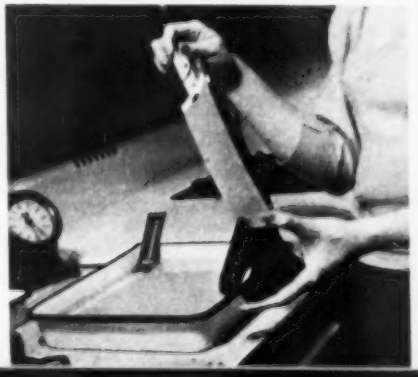
THE TIME-AND-TEMPERATURE method described on the preceding pages is a safe, convenient way to process your films—if the following conditions are met: *1* the temperature of the solutions is kept at a fixed level, *2* proper agitation (five seconds every minute) is given, *3* developer strength is maintained at a constant level by use of replenisher, or developing time is increased to compensate for partial chemical exhaustion, and *4* the roll was properly exposed and all frames on the roll are approximately equal in contrast and density.

For most of us, it's rarely possible to control all these factors perfectly. If we develop by time and temperature our results are a mystery until we turn on the white light, and by that time the film is in the hypo and it's too late to correct mistakes. Often enough the best shot on the roll will be the one that was underexposed, and if we had a way of catching this error during development we could turn disaster into triumph. This is the reason, the main reason, for development by inspection.

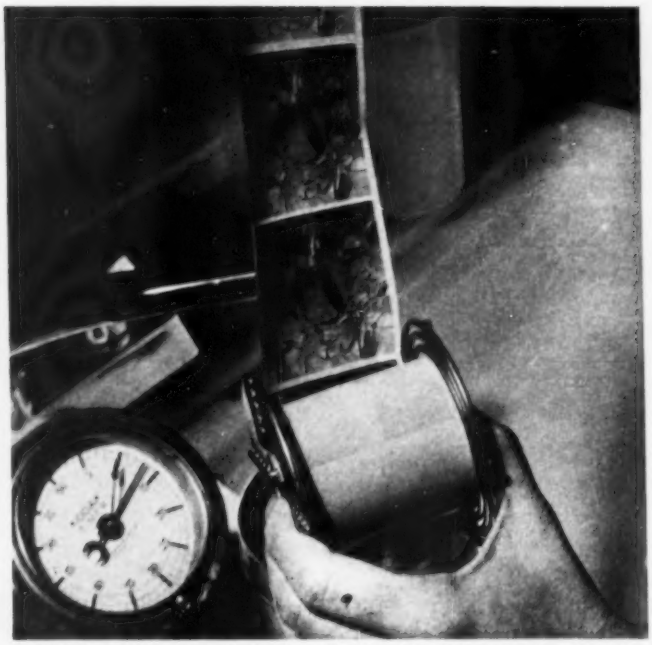
Inspection development need be no more difficult than the time-and-tem-

Proper method of inspecting is demonstrated above. Remove film from tank, unroll a few frames, and hold no closer than about two feet from safelight (a 15-watt red for ortho, a 10-watt green for pan). Look *at* surface of emulsion.

Darkroom tray can be used instead of a tank for inspection development of two rolls at a time. Right, clip two rolls back-to-back (emulsion side out) with wooden snap-type clothespins. Far right, hold film so it falls in a U-shaped loop and immerse in developer. Run entire length of film through with a continuous seesaw motion of hands.



In five minutes (1/4 total developing time) the negative has built up rapidly and *shadow* details already are nearly complete. Super-XX and D-76 were used for demonstration.



In 10 minutes (1/2 total developing time) the highlight areas have begun to pull ahead of shadow areas; negative is printable but low in contrast. To make these pictures, identical rolls were exposed for each immersion time.

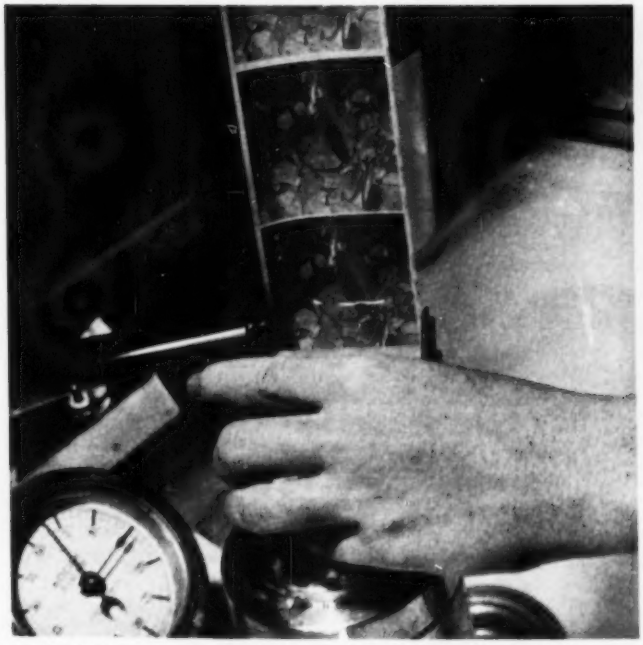
Here are unfaked pictures of what film actually

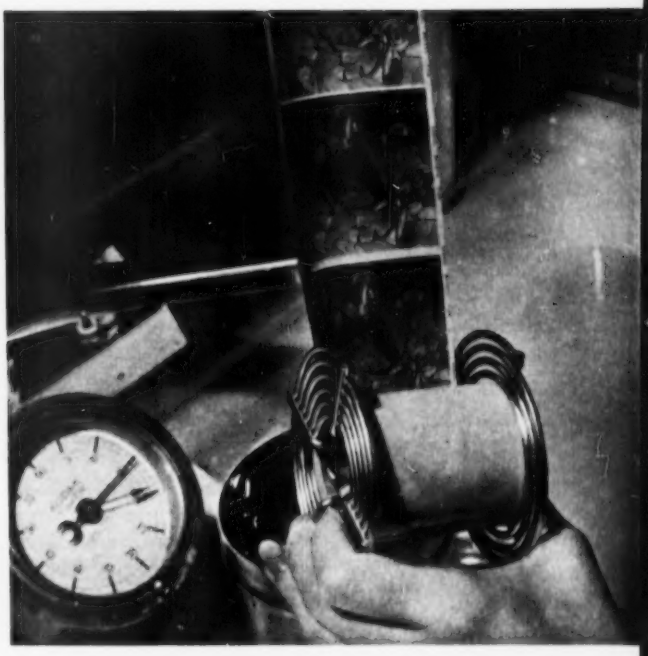
See Candid Shots for how these pictures were made.

perature method. All it involves is an examination of the film halfway through the developing cycle to determine how close to "normal" the emerging image seems to be, and a revision of total developing time is made, if necessary, to correct for any errors that may have crept into the photographic process. The film can be removed from the developer sooner than planned if it is overexposed or the temperature of the developer has risen above normal. The film can be left in the developer for a longer time than normal if the roll was underexposed, the developer is weak, or its temperature less than normal. Individual frames can be cut from the roll if they need special treatment because they are coming up faster or slower than the rest of the exposures.

safelights

The safelight is the key to inspection development; it provides the illumination by which the worker may judge his film. This light must fulfill certain requirements. Since most films in use today are "blind" (insensitive) to light of certain colors, the filter used in the safelight must be of that same color. For example, orthochromatic films like Verichrome and Plenachrome are insensitive to red. A red light can be left on without danger to the film during the entire developing process. However, the eye can see quite well under red light, and

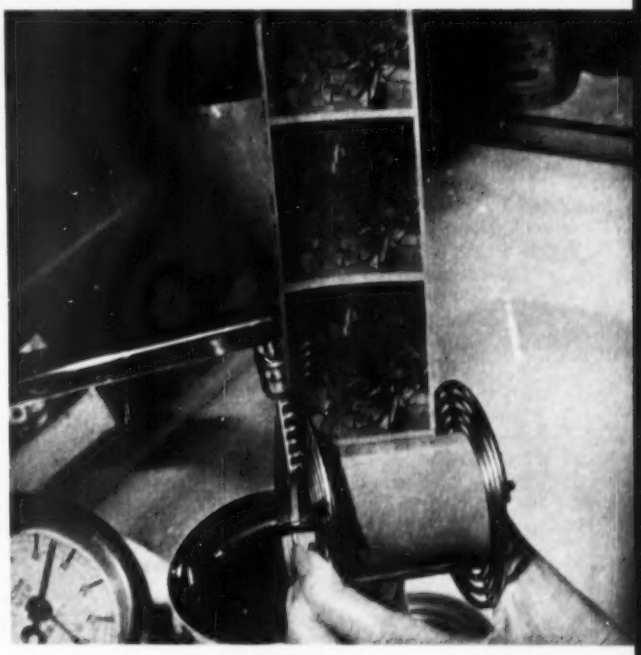




In 15 minutes (¾ total developing time) over-all film density has increased slightly and the highlight areas have built up more. Negative now has adequate contrast and lies within limits of acceptable gamma—.7 to 1.0.

In 20 minutes (full developing time) negative has reached optimum density and contrast, top right. Inspection method allows you to remove the film at any time, thus correcting for variations in exposure and/or developer.

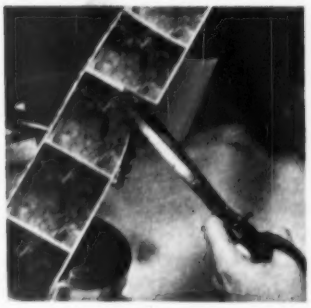
In 40 minutes (twice normal developing time) development is close to finality, but increase in density is only slightly noticeable to the eye. From about the ¾ developing time on, negative build-up is relatively slow.



looks like during development

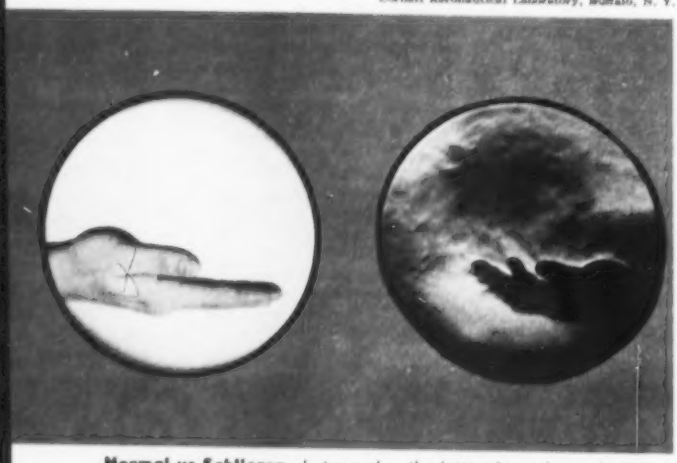
with a little practice can learn to judge the density and quality of the image coming up as the emulsion is continuously darkened by the developing action.

The other popular film type is panchromatic, including such high-speed favorites as Super-XX, Superpan Press, etc. This type is supposed to be sensitive to light of all colors—and it is—but not to an equal degree. For instance, it is most sensitive to blue and least sensitive to a dark shade (*Continued on page* 95)



Cut off frames that need more or less exposure than the rest of the roll, right. Have two tanks of developer ready; a fine-grain solution like Microdol and a vigorous developer like D-76.

Cornell Aeronautical Laboratory, Buffalo, N. Y.



Normal vs Schlieren photography: the latter depends on changes in refractive index of the air as a result of the hand raising air temperature: shot at right was intended to show heat given off by the hand.

Sports action can be frozen with high shutter speeds under existing light by use of modern high-speed films providing extra speed with extended development—shot on Kodak Royal Pan film, f/4.7 at 1/200 sec.

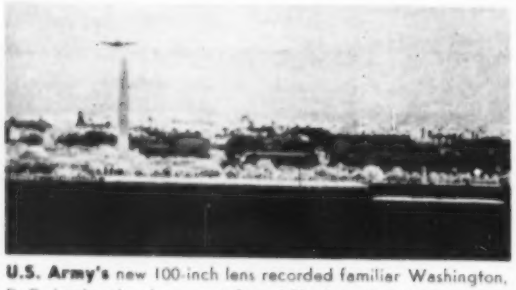
The path of

a review of developments in 1954

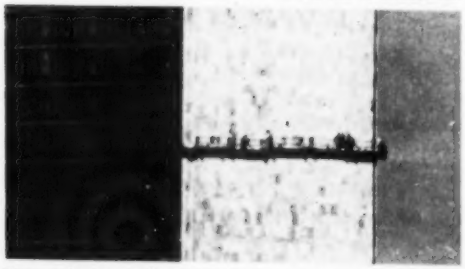
By Dr. Walter Clark, FPSA, FRPS

U. S. Army photographs

Photographs by Zoomar, Inc.

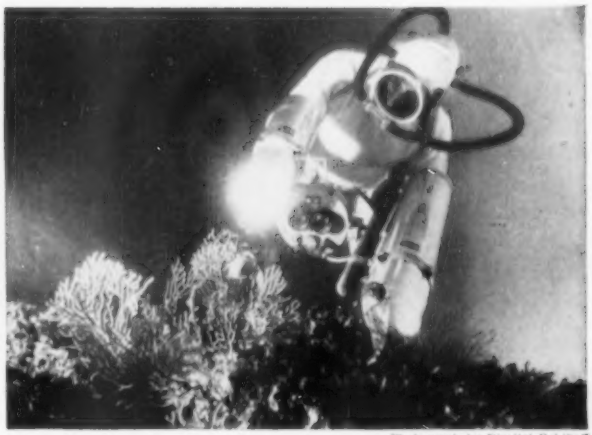


U.S. Army's new 100-inch lens recorded familiar Washington, D. C., landmarks, above, on infrared film from 25 miles away; top picture made from same position with ordinary press camera.



New mirror optics: Scene above on U.N. Bldg. wall was sharply resolved from 5,000-ft distance with 40-in., f/8 Reflectar mirror lens; same view with 50-mm lens, top.

Small Polaroid picture-in-a-minute camera, the Highlander, introduced last year, makes wallet-size prints on a new harder-surfaced material than earlier Polaroid film, using same image-transfer system.



Photograph by Dimitri Rebikoff

Underwater "Torpedo Camera" developed by Dimitri Rebikoff of Cannes photographs ocean depths by light of electronic flashtube built into torpedo housing beside which watertight camera case is mounted.

progress

THIS IS A VERY EXCITING time in photography. There have been periods of active growth before with quiescent interludes, but the new era which started in the early thirties, helped rather than retarded by the wars, is still in full swing, and the past year has, if anything, increased the momentum.

The amateur and professional photographers should be very pleased. The things which have been accomplished for them include higher-than-ever film speeds with no increase in grain; greater diversity and improved quality in color and facilities for home-processing color film; the rebirth of stereo; newly designed cameras and auxiliary equipment; quite a number of new lenses and exposure meters; minuscule flashbulbs and lighter-than-ever portable electronic flash units; low-cost, high-quality amateur motion pictures; wide-screen movies, and new and important developments in fields which influence the amateur indirectly—science, technology, documentation, and theory. For real bewilderment, the photographer is advised to peruse the directories of photographic products which appeared during the year.

Higher speed has always been the request of the photographer, and the past year has seen very significant strides. In England, the Ilford Company brought out their HPS fast film, and here, Du Pont introduced its "Superior" Press film, and Kodak its Royal Pan film, all in sheet form and of speed at least twice that of the fastest films available a year earlier. These have been followed by a variety of Kodak films which employ the same basic emulsion characteristics as the Royal Pan, and come in 35 mm, 4 x 5 film pack, and 620 and 120 roll film sizes, as well as for professional motion pictures. The speed is conservatively rated at an ASA daylight exposure index of 200 and 160 tungsten, or twice the figure for Super-XX film. The new manufacturing techniques have resulted in doubling the speed without increasing the grain, and the films have increased exposure latitude. The ASA indexes include a generous safety factor intended to insure the index being safe to use under a wide range of conditions. The careful workers, however, can cut this down and give exposures corresponding to indexes twice or even four times as great, depending on the lighting and the subject. In average sunlight, a good basic exposure could be 1/100 at f/22 and still include a good safety factor.

There seems to be no shortage of ingenuity and effort in camera design. The single-lens reflex camera for 35-mm film is still increasing in popularity, and competition has resulted in a variety of new features which include the five-sided roof prism finder, which gives an erect full-frame-size image seen through the taking lens at eye level; the split-image rangefinder; preset and automatic diaphragms which permit focusing to be done at high aperture in order to permit a bright image while focusing; new wide-angle lenses designed so that the rear elements do not intrude in the camera and interfere with the movement of the mirror; the use of field lenses of the Fresnel type, which increase the brilliance of the image on the viewing screen and tend to even out the illumination over the whole picture area.

In the new Contaflex camera, a shutter is arranged in front of the mirror instead of behind, as in most cases, and the split field rangefinder is in the center of the field that is seen through the full-frame reflex finder, thereby assisting in focusing, which is sometimes difficult to do on the groundglass. The traditional Leica camera, forerunner of the miniature, has now appeared with a new look in the form of the M-3 Leica. New features include a single-window combined rangefinder-viewfinder with automatic adjustment for parallax and for changes in lens focal length.

The Retina IIIc and IIc are the new development of the Kodak Works in Germany, among the novel features being interchangeable lenses associated with a between- (*Continued on page 100*)

THE PROJECTOR THAT RUNS BY ITSELF

Revere's new 888 slide projector is really automatic

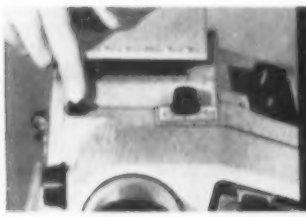
By Robert L. McIntyre

1 First step in operating 888 is to turn on blower and lamp (with one knob). Blower starts first. Unit operates on 110 to 120 v ac.

2 Function knob selects any one of three types of operation—manual, semi-automatic, and automatic (in slow, medium, fast speeds).

3 Magazine is also tabbed file for 36 slides (inverted here for showing), intermixable in any mounts. Screen is dark at loading.

4 Manual selector brings slides into projection position for any sequence except regular order; can be turned backward, forward.



5 Release button is used for manual or semi-automatic operation, permits slides to remain on screen for any desired length of time.

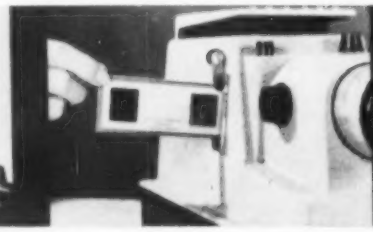
6 Remote control cord allows speaker to operate projector himself semi-automatically from any spot in room, thus pacing slides.

A NEW WORD is what we need to describe the Revere 888 slide projector. The term "automatic" already has been applied to so many slide handling systems it's hard to tell just what it means. With the automatic 888, though, it means you can insert a magazine of 36 slides, push a button, and then sit back and enjoy the show without lifting a finger. The pictures appear by themselves, one after another, on the screen.

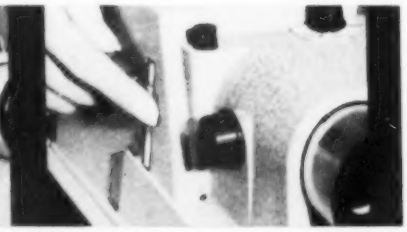
In the same language, "semi-automatic" means you can load the projector and then change slides by pushing a button any time you wish. The button may be one on the machine itself, or at the end of a remote control cord that will reach anywhere you want to be. Even "manual" operation doesn't mean inserting slides by hand. It means turning a knob to select the slide you want and then pushing a button to throw it on the screen.

There have been automatic projectors on the market for years—units designed for commercial display use in store windows, convention booths, and as a part of salesmen's kits. What makes the Revere 888 news is the fact that it is the first automatic projector designed to fit in with the amateur photographer's needs. It uses 36-slide magazines adapted to amateur filing systems. Its three methods of operation provide enough flexibility to fill (*Continued on page* 92)

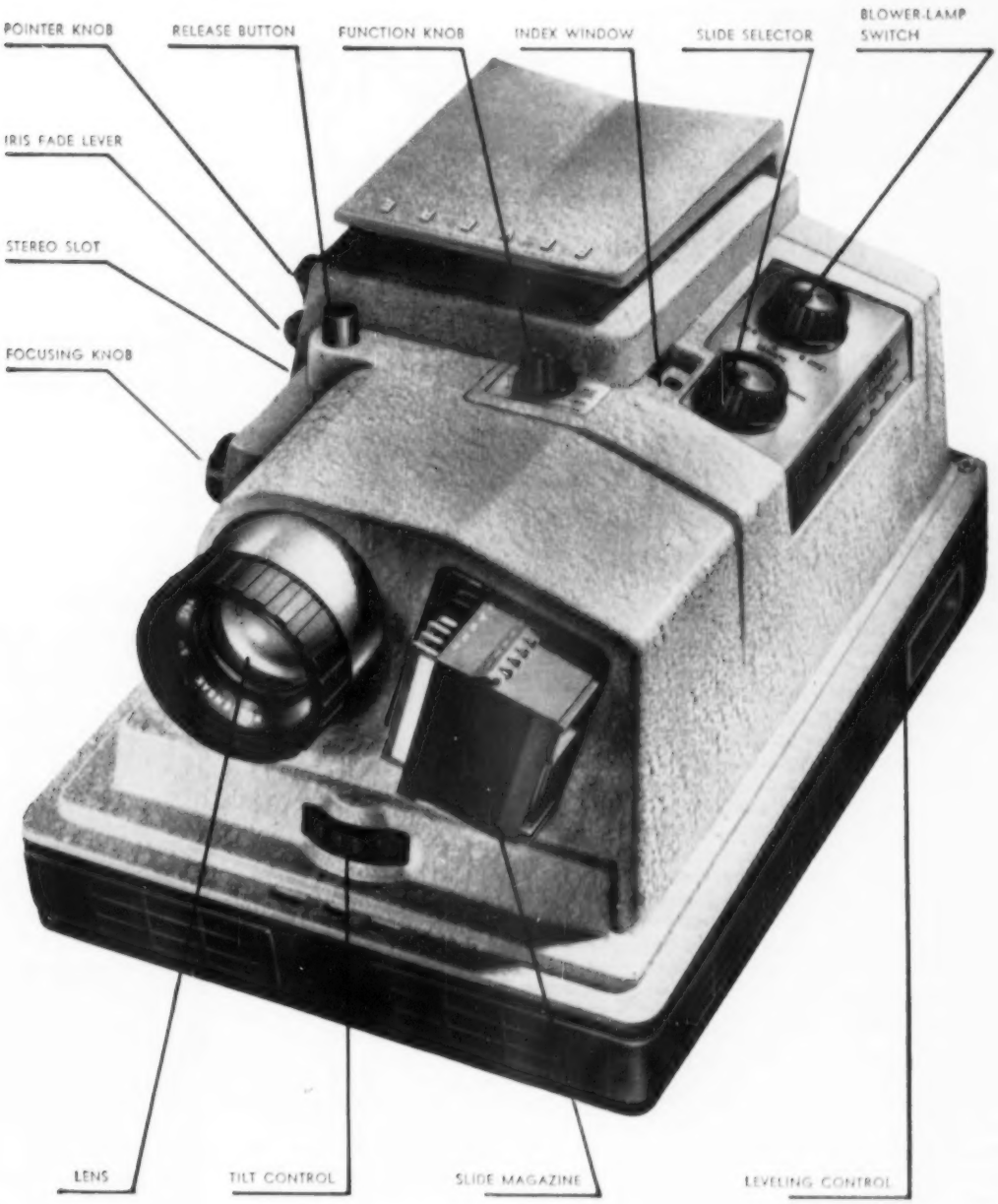
7 Pointer is built into projector, superimposed so that particular areas of interest in slide may be indicated to audience.



8 Stereo slides can be shown single-frame by inserting one end in special slot provided. In this case, slides must be hand-inserted.



9 Iris fade lever controls brightness of pictures on screen, permitting compensation for over-exposed slides, use of fade-outs.



10 Shutter of projector's 5 in. f/3.5 anastigmat lens automatically provides smooth fade-ins, fade-outs; is independent of iris fade lever.

11 Remote receptacle accepts such special accessories as remote control cord, electronic timer, adapter for tape-recorder synchronization.

12 Projector case fits base of unit, making an over-all size of 13x9x9 inches, weight, 13 lbs. Slide trays are available separately at $1.49.

The Kodak BULLETIN

Swifter Color &

. . . and how to fill up the living room wall with your favorite scenery . . . who made the first coupled-rangefinder camera, and when . . . how to use a piece of fogged film to monitor a smudge of smoke . . . why the viewfinder of the Kodak Stereo Camera goes around corners . . . and a curious virtue of Kodak's new ultra-speed films.

Fast-action color

Don't look now, but your miniature-camera lens is three times as fast as it used to be. You'll be taking more fast-action color shots this year than ever before. And, if you do your own film processing, you'll be looking at the day's transparencies within an hour or so after supper.

People are just beginning to realize what the new triple-speed Kodak Ektachrome Films, E135 and E828, mean to action color. The daylight index is 32. Average exposure, in sunshine, 1/50 at *f*/11 or 1/200 at *f*/5.6 or 1/500 at *f*/3.5. That's three times as fast as Kodachrome Film, Daylight Type.

Even with big-aperture lenses, fast-action color shots have always been a three-way fight between shutter speed, field depth, and available light. The new Ektachrome Film helps chop this problem down to size.

There's also a companion film, Kodak Ektachrome Film, *Type F* (for clear flash) in 35mm and 828 size. The speed difference is not quite as dramatic as for the daylight film, but it's there. A typical flash guide number is 120 (vs. 80 for Kodachrome Film, Type A, under the same conditions).

You can process any of these higher-speed Kodak Ektachrome Films in about an hour, ending up with full-color positive transparencies. You need only the simplest home darkroom equipment, and a $1.80 processing kit, Process E-2. (*Make sure it's E-2.*) You can also have the film processed at a commercial color lab, if you're too busy.

A 20-exposure roll of E135 costs $1.85; an 8-exposure roll of E828, $1. Try some soon, and see what a difference a triple-speed film makes.

Flashed densities

Most of our film is sold unexposed. Most, we say. There's a useful exception. We refer to Kodak Flashed Densities, used for cutting down light by a specific fraction. It's precisely exposed, precisely processed, and precisely calibrated film (not to be confused with Kodak Wratten Neutral Density Filters, in which diffuse density nearly equals specular density). One application is in equipment for monitoring the smoke output of distant chimneys by comparison with adjacent sky seen through the film. We thought you'd like to know about this pre-exposed film just so you can say you've heard everything. For camera use, of course, better stick to

Kodak Plus-X, Super-XX, Verichrome, Royal Pan, Ortho-X, Tri-X, Super Ortho Press, Portrait Pan, Super Panchro-Press Type B, Commercial Ortho, Micro-File, Kodachrome, Kodacolor, Ektachrome, Ektacolor, Kodak Infrared, and so forth.

Film saver

We'd be willing to bet there's a lot of Type A Kodachrome Film wasted because people get within a few frames of the end of a roll and then take some shots they don't need because they want to switch to Daylight Type Kodachrome. It doesn't take many such wasted frames to pay for a Kodak Daylight Filter for Kodak Type A Color Film that lets you use the indoor film outdoors. Prices start at $1.75 in Series IV.

Efficient films

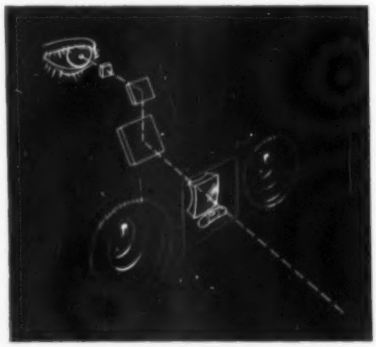
This is a sort of the-rich-get-richer story. Kodak Royal Pan Sheet Film and Kodak Tri-X Roll Film are enormously fast to begin with—ASA 200 Daylight, 160 Tungsten. (Some people say they're five times that fast.) Naturally, such fast films are more likely to be used at *smaller* lens openings. And a smaller lens opening is more efficient with a between-the-lens shutter, because *the whole opening is uncovered for almost the entire exposure.*

This extra "exposure bonus" must be allowed for in order to avoid too-dense negatives. It may double your index when you combine a small lens opening with a high shutter speed. Practice will tell. What it boils down to is that these remarkable films permit you to use the settings that give the films a chance to do their best. You win two ways.

Stereo periscope

When you first examine a Kodak Stereo Camera, you may wonder how the viewfinder gets from hither to thither. The eyepiece, you'll notice, goes in at the *top* of the back, and the objective lens comes out squarely in the middle of the camera front.

Okay, it's done with mirrors, like a periscope. And for three very important reasons: (1) the eyepiece *belongs* at the top of the back, so you can brace the camera firmly across nose and cheek, (2) the front lens *needs* to be centered, to



give you complete freedom from parallax error, and (3) the long-base "scope-sight" finder improves your accuracy of framing even if your eye isn't precisely centered on the eyepiece.

In our opinion, this is practically the perfect eye-level viewfinder. Gives you a clear, critically sharp, accurately framed, undistorted, parallax-free image; helps you hold the camera steady and level. Comes *only* on the $84.50 Kodak Stereo Camera, which we consider the most practical stereo camera yet built.

20 Projectors

Scenery by the yard

Super-size enlargements are dramatic things around the house, and photomurals are even more so. Strictly speaking, a photomural covers an entire wall of your game room, living room, dining room, or study. This can be quite impressive to your neighbors or guests, especially if the subject is Niagara Falls or the Grand Canyon.

However, we usually counsel restraint on the first try—such as one-piece prints about 40 inches by some handy length. This eliminates problems of making joints and matching image tone. Actually, giant prints and photomurals are neither expensive nor difficult, if you plan the operation sensibly in advance.

A roll of Kodak Mural Paper 42 inches wide and 30 feet long costs only $11.35. You and two of your friends could team up on such a roll, and end up with three prints, each 8 feet long (even if you used up 6 feet of paper for test strips). The 8-foot length is easy enough for two people to manipulate through a trough of developer and just right for gluing to an 8-foot sheet of composition board—for wall hanging with a neat moulding all around. For $5.35, you can get a 40-inch by 10-foot roll of Kodabromide Paper (which has a relative speed of 2000 against Mural's 800). If you'd like a handy survey of techniques, our Sales Service Division will be happy to send you a copy of the booklet "Making and Mounting Giant Prints and Photomurals," free of charge.

Focus on history

Who manufactured the first hand camera with a focus-coupled rangefinder? We did, here at Kodak, so far as we can discover. That first historic camera was a No. 3A Autographic Special. We presented it in February, 1916. The rangefinder was down in front, below the lens, where you grabbed hold to slide the bellows in and out. It worked; but, like a lot of pioneering ideas, it was ahead of its time. Only in the 1920's, when miniature cameras with high-aperture lenses became popular, did the coupled rangefinder idea catch on.

It's a far cry from 1916 to the rangefinder of today's Kodak Signet 35 or Kodak Chevron Camera. A lot of engineering has gone across the drawing boards. The mechanism has moved to a big, roomy housing on top of the camera. The small, cramped design has given way to big, husky components. Spring-loaded V-bearings now eliminate all focusing slack, giving these Kodak rangefinders unique accuracy. In the Signet, the range- and viewfinders have been combined, with a big, clear rangefinder triangle centered in a full-frame field. Some difference. Go down to your Kodak

dealer's, try one, and you'll see just how good a rangefinder can be.

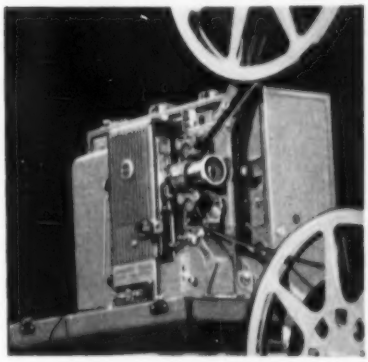
(Don't think from this that the Signet and Chevron are just rangefinders floating in mid-air. The rest of the camera is equally good in each case—*Kodak Ektar f/3.5 Lens*, velvet-smooth ball-bearing lens mount, accurate shutter, precision die-cast aluminum-alloy body, plus other useful features. A few Kodak Ektachrome or Kodachrome transparencies will show you how much you get for $87.50 in a Signet, $198.50 in a Chevron. Today's a good day to start finding out.)

20 Projectors

Recently, all in a splash, we announced *six* new models of the Kodascope Pageant Sound Projector. This dazzling array of new 16mm sound-on-film equipment started us wondering how many projectors Kodak *does* make. To add them up—still and movie, silent and sound—we had to use the fingers on both hands, twice.

First, naturally, we counted the two models of the big professional Model 25: tungsten, $3485; arc, $4380. These are theater projectors, 16mm sound-on-film. Tremendous power; able to handle shows in Madison Square Garden (and your own high school auditorium).

Then the six Pageants—four with 15-watt amplifiers, two with 7-watts. Beautiful machines, $425 to $530. (The details on the whole series are in an attrac-



tive new catalog, which our Department 8-V will be happy to send you free of charge.)

Then the Kodascope Royal, 16mm silent, $240; and the Kodascope Analyst, a special adaptation of the Royal for football coaches, golfers and golf instructors, time-motion analysts, expert amateurs who find it especially useful in editing as well as showing movies. $295.

And the popular 8mm Brownie Movie Projector, $69.50; and the Kodascope Eight-71A, $110.

And then the Kodaslide Projectors for 2 x 2-inch slides: the high-powered professional Master Model, $169 up; the thrifty 150-watt Kodaslide Merit, $23.95; the 200-watt Highlux II, $35.35; the 300-watt blower-cooled Highlux III, $54.75; the two professional models of the 500-watt blower-cooled Signet 500 for both slides and filmstrips, $98 and $105; and the two regular models of the Signet 500 (see back cover, this magazine).

The moral, we think, is twofold: (1) whatever your need in a projector—for 16mm, 8mm, filmstrip, or 2 x 2 slides—Kodak makes one that fits; and (2) we've had quite a bit of practice in making good projectors. (We made our first Kodascope Projector, which was the first home-movie projector, back around 1923.)

Prices include Federal Tax where applicable and are subject to change without notice.

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amateur requirements. They are explained in detail in the accompanying photographs of the unit.

The 888 is really Ted Briskin's baby, conceived after he succeeded his father, Sam, as Revere Camera Company president. Bob Moore is the engineer who bore most of the labor pains as it progressed from idea to drawing board and then through a series of experimental models into the final production unit. The insides of the projector are surprisingly simple when you consider the number of functions it is designed to perform. Two motors are employed; one drives the fan and the other powers the slide-changing operations.

What will public reaction be? The folks at Revere are optimistic. The first engineering model was demonstrated for dealers at the PMDA convention in Chicago last April (1954). The first production models began to trickle out of the plant Thanksgiving week. Their first reception was enthusiastic. The price is $119.50—a lot of money for an amateur projector. Yet the 1954 PHOTOGRAPHY Directory listed a dozen different models costing over $100, and none of them with the flexibility of combined automatic and manual operation. The new machine is sure to have an impact upon this portion of the projector market, and its appeal may well dip down to influence buyers in the wider segment between $75 and $100.

What's wrong with automatic projection? Slide makers who are accustomed to using machines with ordinary carriers will be disappointed at the relative slowness with which a new slide replaces an old one on the screen. With the simplest carriers you merely drop in the new slide and throw the carrier over—and the new slide seems to chase the old one off the screen. With the 888 there is a dark period of about 3 seconds between slides.

This dark period is inherently necessary in any projection system that makes use of slotted magazines and returns slides to them in order after showing. It takes time to push the slide back into the magazine, select a new one and move it into position for showing. The longer the projection period is, the shorter the dark period seems by comparison.

Free-wheeling, spur-of-the-moment slide selection is out with the Revere 888. You can't conveniently look at other slides in a magazine, while one is on the screen, to select the next one for showing. You have to set up your show beforehand, arranging the slides in order for automatic operation or cataloguing them by number to select them manually as you go along. All this is probably to the good; slides should be arranged to present them at their best.

What of the future? The 888 comes with 500-watt lamp but can handle 750 watts with a change in heat-absorbing condenser element. This adaptation is sure to become available soon.

More intriguing, though, are the possibilities of that remote control outlet in the rear of the projector. Nothing has been said about magnetic changing systems, but Revere has been making tape recorders for a long time now and it shouldn't take a crystal ball to predict that there soon will be a companion tape recorder unit to play back musical accompaniment and commentary along with magnetic impulses to activate the slide changer.

New tools suggest new jobs to be done. It will be interesting to see, now that automatic projection has reached the amateur field, what heights are reached in making use of it.—

New Books

(Continued from page 28)

tributor to POPULAR PHOTOGRAPHY and an experienced teacher of picture-taking methods. Beginning with some basic talk about negative quality and enlarging equipment, he leads the reader step by step through the making of straight enlargements up to advanced techniques like vignetting, flashing, and multiple printing. There are chapters on toning, mounting, drying, and displaying, too, all with numerous illustrations and diagrams.

Mr. Foldes follows a time-honored theory of pedagogy in this book: leave the student no unanswered questions, direct every move, provide exact rules for every situation. Almost anybody with normal IQ and co-ordination ought to be able to learn enlarging techniques by following the author's directions to the letter. However, the book would be even more valuable if less emphasis had been given to darkroom tricks and more to the truly creative aspects of enlarging as a means of personal expression, of emphasizing picture content, and of making photographs speak with greater eloquence and clarity.

PRACTICAL PHOTOGRAPHY, by B. K. Johnson. Published by Hutchinson's University Library, London, distributed by Longmans, Green & Co. Cloth bound, $2.40, paper bound, $1.80, 143 pages, 5 x 7½.

Basic scientific principles are explained to help the amateur take better pictures, covering light, lenses, supplementary lenses, chemical processes, the darkroom, etc.

THE PHOTOGRAPHERS MARKET PLACE, by Edna Bennett. Published by R. Maschke Publishing Co., Paper bound, 5½ x 7¾, 78 pages, $1.50.

A cross-index of 500 North American magazines which buy free-lance photographs, with prices paid and selling suggestions.

HINTS, TIPS AND GADGETS for the amateur photographer. Published by The Fountain Press, London, distributed by Rayelle Publications. Paper bound, 5 x 7½, illustrated, 143 pages, $2.95.

Culled from the pages of *Amateur Photography*, this book covers many of the gadgets used in photography, from exposure to finished print. Many how-to directions are included.

CHESAPEAKE BAY AND TIDEWATER, by A. Aubrey Bodine. Published by Hastings House. Cloth bound, 9 x 12, illustrated, 144 pages, $10.

Historic Chesapeake and surrounding country are revealed in 220 photographs taken by this famous photographer.

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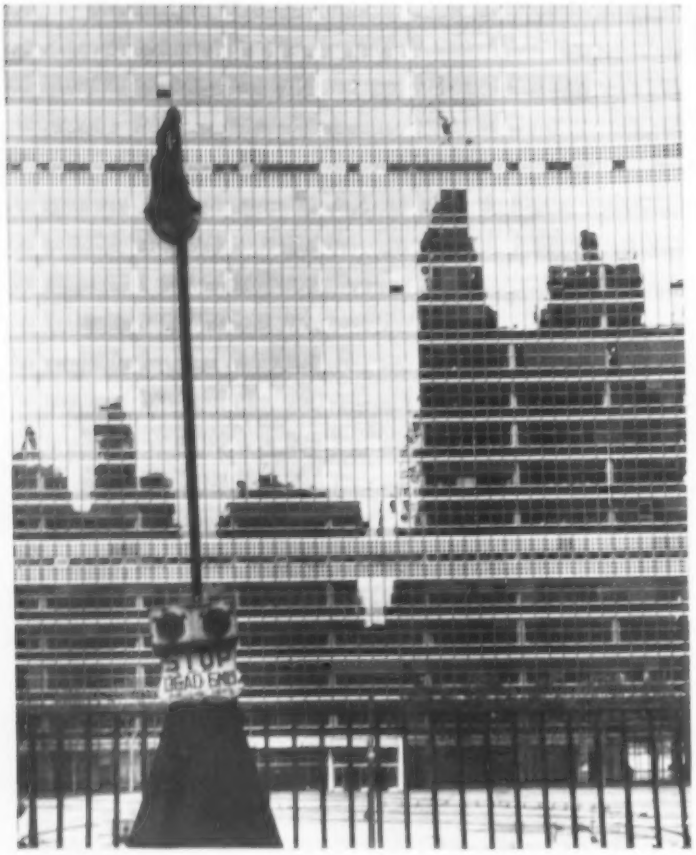


U. N. BUILDING SHADOWS By Dick Hanley

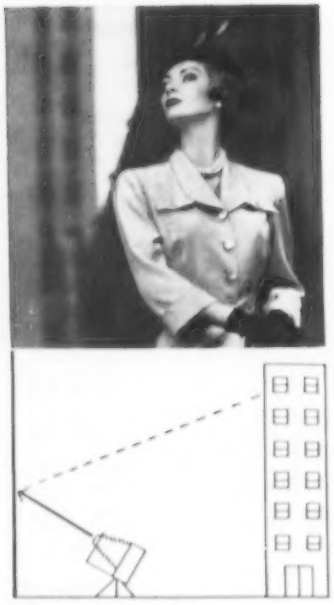
HOW TO photograph reflections

Reflections are interesting subjects when properly handled. Here's how

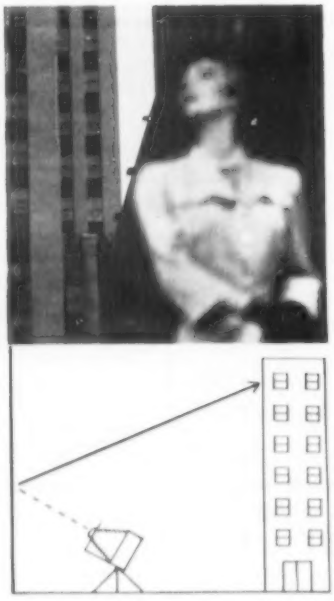
By JOSEPH FOLDES

ONE of the many things that make photography such a wholly fascinating hobby is the picturing of reflections, either as the principal subject matter or as adjuncts to other picture material.

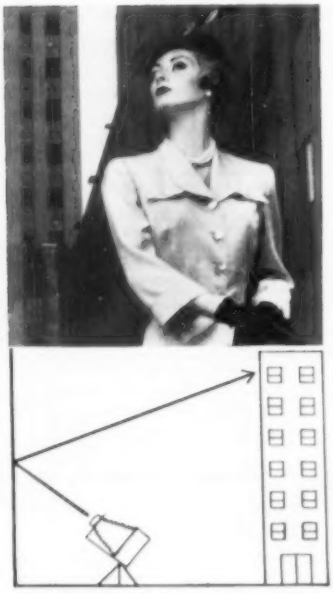
Adding the photography of reflections to one's repertoire brings a welcome independence of the weather, for they abound when other subject matter may be dulled or obscured by rainfall. Too, they appear everywhere and the country dweller, who can find his pictures in roadside puddles as well as the pavements and windows of nearby villages, has as many opportunities as the city photographer with his wet street and



Focusing on manikin in show window left buildings considerably out of focus. In diagram, solid line shows plane focused upon; dotted line, the disregarded plane.



Focusing on building left manikin quite fuzzy—but neither buildings nor manikin need be out of focus. For solution, see the sharp photograph reproduced at the right.



Sharpness in both planes was obtained by adding the two distances together, dividing by two, setting camera at the resulting distance, and stopping down lens.

show-window reflections of interesting buildings.

Reflections *can* be beautiful; they *can* be employed to add interest to a scene; or they *can* be downright mystifying, causing the viewer of the resulting picture to wonder how on earth it was made. However, they will be none of these unless the photographer remembers that when any subject matter but the reflection itself is included, there are two—or more—focal planes to consider.

Suppose you are photographing a reflection in a puddle and it has an interesting fringe of reeds or grasses. If you focus on the latter the reflection itself will be out of focus, for its actual distance, optically, is that from the reflected object to the reflecting surface *plus* the distance from the reflecting surface to the camera.

Of course, in the example described, you can't possibly set your camera for both distances, so you must compromise—and that's not so hard to do. Just set your camera at the *mean* of the distances, i.e., add the two distances together and divide the total by two. That won't do the trick entirely, so you then step down your lens until the depth of field includes both distances. If there are more than two distances involved—suppose there was an interesting background you wanted to include with your pond reflection and its reeds—just split the difference between nearest and farthest distance and disregard the one in between.

The focusing problem is simplest when only the reflection is to be photographed, as when one takes his own picture in a mirror. But it still is necessary to remember that two distances must be considered—the one from camera to mirror, and the other from mirror to subject. Add the two distances together and set your camera as the total indicates.

Reflections can be made a real asset, or they can wreck a picture if wrongly attempted. Consideration of the foregoing simple suggestions will keep them in friendly control.—

Roll Film Development: by Inspection

(*Continued from page* 85)

of green. In fact, green affects it to such a small degree that a dark-green safelight can be used to inspect pan film while developing action is taking place.

Most of the films in use today fall into either of the above two categories and can therefore be inspected under a red or green safelight. It is worth while, however, to mention two other distinct film types, since by so doing we cover all the kinds made that can be employed in everyday photography.

Commercial photographers and those who work with sheet-film cameras are thoroughly familiar with blue-sensitive or "color-blind" emulsions. These films react to blue, violet, and ultraviolet light only. They belong to the first type of film developed as photography grew up out of the experimental stage. (In fact, it is characteristic of all film and paper emulsions that they are more sensitive to blue, violet, and ultraviolet than they

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are to other colors.)

The final type, and one perhaps destined to become the most important for many photographers, is hyper-panchromatic, or film which is equally sensitive to all colors. Some of the new extremely high-speed films are almost hyper-panchromatic, and so require great care during inspection to prevent fogging.

Actually, the photographer need purchase only two safelight filters to inspect all the above four types. These are dark-red (Wratten Series 2) filter and a dark-green (Wratten Series 3). These filters are made in all sizes to fit all shapes and types of darkroom safelight lamps. It's not necessary to purchase a complete assembly because the filter for printing can be removed and replaced by the film-inspection filter when needed.

When working with ortho films and a red filter, the entire job can be done with the safelight on. However, this is not true with panchromatic film and its green safelight. Here, the safelight never is turned on until at least 50 percent of the expected total time has elapsed. Even now the film may fog if the light is left on for the total remaining time.

Film manufacturers suggest that the safelight be turned on for a few seconds only. However, a fairly safe rule of thumb is never to exceed about five percent of the developing time. For example, if the total expected time in a particular developer is five minutes, the inspection maximum is about 15 seconds; if the total is 15 minutes, then 45 seconds of inspection at the proper viewing distance will not hurt the film. Of course, if a quick glance at the film is enough to tell the worker what he needs to know, then the light should be snapped off right away.

To prevent fogging the film, the bulb used should not be stronger than 15 watts with the red filter and 10 watts with the green, and the lamp distance from tank or trays should be a minimum of three feet.

The eye is a marvelous light-sensitive instrument. Upon first going into the darkroom, turning off the white light and trying to see something under a dim safelight can be discouraging. But the eye quickly adjusts to the low level of illumination, and when it is fully acclimatized there is more than enough light to see by, for people with normal vision. This adjustment period will vary, depending on how much light was present before going into darkness. At night, the worker may have to wait only five minutes or less before his eyes acquire their maximum sensitivity, but in the daytime as much as half an hour may be required.

"Fogging" or light-streaking is the pitfall to be shunned in inspection development. It can result in a graying over of the entire negative and may then ruin the film completely. However, if the directions given above are followed, this should never happen. Of course, you should also check your darkroom to see that there are no light leaks from outside, since this will fog the film, too. Simply turn off all lights and sit in the dark for five minutes. After your eyes become sensitive you'll be able to see any leaks.

developers and film

The speed of the film and the characteristics of the developer also have an effect on fogging.

Finegrain developers are slow-acting. Their gentle treatment of the film emulsion is the reason why they produce good texture in the silver deposits that form the image. To get this effect, film speed is sacrificed. To state it another way, any film being developed in a finegrain bath will be slower than if that same film were processed in a more active solution.

This factor has a direct bearing on inspection. The more gentle working developers (Finex-L, Microdol, etc.) will enable the worker to hold up his roll to the inspection light for longer periods without running the risk of fogging it. If the formula used is intended to produce maximum film speed, as is the case with Normadol, D-76, Promicrol, and other vigorous developers, the inspection time must be shorter. The more powerful the developer the more care must be used when inspecting, and an easy way to judge this is by the total time recommended for development. When normal development at 68 F is *less* than 16 minutes, no more than five percent of the total time should be devoted to inspection, but if the time runs longer than 16 minutes, up to 10 percent will be safe enough. Remember, though, that these maximum inspecting times under a green safelight should not be employed unless absolutely necessary.

The amount of development to which the film is subjected also affects safe inspection time. If the roll turns out to be underexposed when inspected for the first time it should be ducked back into the soup without delay. The longer the film has to develop to make up for underexposure the more likely it is that an inspection light will fog it. This does not mean that a safelight cannot be used, but it does mean that the less time the film remains under the safelight the longer the film can be overdeveloped before fog level is reached.

With most developers, if the film is left to develop for a long enough time, even without being exposed to a safelight, fog eventually will appear. However, this occurs way beyond normal developing time and is nothing to worry about during ordinary processing. But when the film is left in the developer for an excessively long time, this chemical fog will occur and be enhanced by safelight fog as well.

setting up

Inspection will go smoothly if you make the right preparations beforehand. First make your darkroom safe for inspection development. Cover the bathroom or kitchen window with cardboard or any other material that will prevent light from seeping through. If light comes through the door from other rooms it can be made tight by tacking weather stripping inside the wall frame. To check these efforts for complete efficiency, sit in darkness for at least five minutes, as mentioned above. Most photographers who use temporary home setups wait until night when the outside light is practically nonexistent and the artificial light

in adjoining rooms can be turned off.

The tools needed are few in number. The regular items: tank, developer, water supply, thermometer, and timer. Add to these a stand-by bottle of vigorous developer for emergencies, scissors, and safelight and you're all set to go. The sink should be the focal point of activity. Immerse the developing tank in water of the proper temperature (68 F) to insure maintaining the same level throughout development. It's also a good idea to fill the developing tank with solution and bring it to the proper temperature beforehand.

By putting the safelight on a collapsible floodlight stand it can be easily adjusted to hang the proper three feet above the tank. (For a permanent darkroom setup hang it on a drop cord from the ceiling over the sink.) Try to position the safelight so that you don't have to look directly into it when working at the sink. Looking directly at the filter tends to lessen your eye's sensitivity in much the same way that looking directly at a light bulb will impair your vision in normal room light. Have the light come from over your shoulder or tilt the safelight slightly so that it faces away, shining toward the opposite wall. (But don't place it much more than the recommended three feet away or the light will be too dim for inspection purposes.)

All developing operations should be timed, even though the film is inspected. Place the timer where it can be seen by the safelight illumination. Of course, the cover could be placed on the tank once it's loaded, and the white light turned on, but this would interfere with your carefully acquired eye sensitivity. Also, remember that about 100 percent overdevelopment is about the limit for most developers. Beyond that point, excessive chemical fog is almost sure to result.

tank developing

The type of tank used is of relatively little importance, since inspection is no more difficult with the adjustable, plastic kind than it is with the fixed-size metal type. With the sink water at the correct temperature and at a comfortable level so that the tank will not float when placed in it, the safelight located three feet above the sink and facing down in such a manner that the light does not shine directly into your eyes, and the timer, developer, and fixer all within easy reach, the white light is turned off and the film is loaded onto the reel. Never turn on the safelight to load the tank. This may be a temptation because of its convenience, but any green light reaching the film at the first stage of development may cause severe fog.

Developing procedure is the same as for time-and-temperature. The reel is placed in the tank, developer is added (unless the tank already is filled), and the timer is turned on when the tank is full. Agitate continuously during the first 15 seconds to prevent the formation of air bubbles between the surface of the film and the solution. After that agitate for five seconds every minute. Once the cover is placed on the developing tank you can turn on the green safelight, thus

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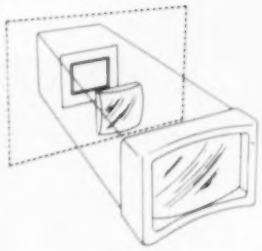

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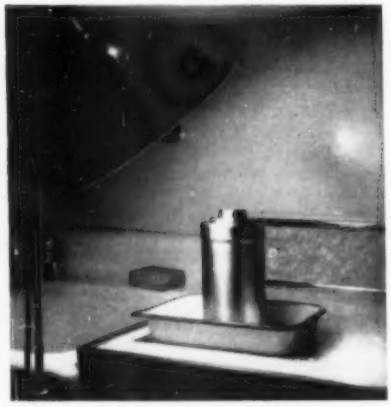
After half the anticipated developing time has passed, turn off the inspection light, remove the tank cover, and lift out the reel. Pull the outside end of the film loose from the reel and unwind to expose a few frames. Now turn on the inspection light and view the developing progress to date.

The film should be inspected by reflected light. That is, look *at* the surface of the emulsion, just as you view the



To test tank for light leaks, load with unexposed film, replace top tightly, and develop as usual—but under photoflood lamp.

final print, not *through* it, as you view a completed negative. The opaque film backing is still present at this stage, making it difficult to see what's happened if you try to look through the emulsion.

What should you expect to see? The five accompanying illustrations showing five different steps of development will give you some idea. At half-time, a substantial image should have formed. If, when the emulsion side is held up to the light, it appears that there are only faint signs of a picture, the film is very underexposed and should be switched to a more vigorous developer. If the image is very black and solid looking, it is overexposed and should be removed at once. A final check of this latter point is provided by turning the film over and looking at the backing side. It will appear white and opaque, but if the image is fully developed, bold traces will show through.

In most cases, inspecting about one-third of the roll will be enough. However, when you suspect that exposures are uneven, the roll can be unwound further, taking care not to pull it off the reel altogether. Rolling film back on the reel is easy if the edges of the film are gently squeezed while the reel is rotated. *But this is done in the dark.* Use the safelight only when you're actually inspecting with it. The inspected film then should be returned to the tank and agitated for 15 seconds continuously to make up somewhat for the time it was held out of the developer.

If inspection shows that one or more frames are underexposed and will be ruined if developed to the level of the

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rest of the roll, the scissors should be used to cut out the underexposed frames. It's a good idea to keep your standby energetic developer in a tray, since short film strips cannot be replaced in a tank. Rinse the film strips in running water first before transferring from one type of developer to another.

If inspection shows that one or more frames are overexposed, these can be cut off the rest of the roll and dropped into a waiting tray of hypo.

The remaining portion of the roll can be given whatever treatment is necessary. If normal, carry out development to the recommended time, rinse in the usual way, and fix. The strip getting "dynamite" treatment in fast developer should be given a *quick* check under the safelight every few minutes to determine when it is done.

tray developing

Tray development is necessary when tanks are not available for rolls or sheet film. It is a little more awkward to use trays for the reason that the film must be agitated continuously to prevent sticking, when several sheets are processed at once, or to guarantee that rolls are bathed evenly in the solution by methodically running them back and forth through the solution.

The water-filled sink still is the focal point of activity. Set your trays on either side of it: developer on the left and hypo on the right. Place a thermometer in the corner of the developer tray and check it frequently for temperature. If after processing one roll the solution has grown warmer or cooler than 68 F, it should be brought back to the proper temperature before any more film is put through it. When using a finegrain developer it is still a good idea to have a second tray of more active developer in readiness to save any frames or completed rolls that are badly underexposed. In all other respects the tray developing routine is no different from the method described above for tank processing. Again, the green light should not be turned on for the inspection of panchromatic films until half-way through developing time, but ortho films can be processed by a red safelight left on continuously.

Different sizes of films appear different when viewed under a safelight. The darkest looking of them all is 35-mm. This occurs because the image is condensed into such a small area. Under the inspection light, a normally developed 35-mm negative will look solid and opaque, almost black. Roll films look less dense because of the larger image size, and details are easier to see. Film packs resemble roll film in appearance, while sheet films, with their heavy acetate base, tend to look somewhat solider and blacker. The only way to learn what a normally exposed and developed negative looks like under the safelight is to develop by inspection, not once, but repeatedly. While you're gaining the necessary experience you've still got the timer to fall back on in case of doubt.—

The Path of Progress

(*Continued from page 87*)

the-lens shutter—details described below. The new Synchro Compur shutter is used. This was first shown on the Retina and Rolleiflex cameras at the Photokina 1954 at Cologne. The important features are that the shutter speed and lens diaphragm controls are coupled and related to a "light value" scale engraved on the front of the shutter. The light value, determined by an exposure meter or table, takes into account the film speed and the brightness of the illumination. Once the light value setting has been made, shutter speed and lens aperture are automatically set for the proper exposure value. Should the shutter speed be changed, the aperture is automatically adjusted to compensate by the coupling mechanism. However, the lens aperture control moves independently of the shutter speed control should the user wish to disregard the coupling mechanism and light value feature. To make the system practical, the shutter speeds on the dial of the new Synchro Compur are arranged in arithmetical order, each twice as great as the preceding one, rather than in the nonlinear scale commonly used. In addition to this feature, the Retina IIIC has an integral light meter that reads directly in terms of light values. The new Rolleiflex, in turn, has a light value table on its back.

Quite a variety of new designs and novel aspects has come from American manufacturers, specially significant being the competition in the low-cost flash camera field between such cameras as the Kodak Duaflex III, the Anscoflex, and the Argus Super 75, and the continued development of 35-mm cameras, new models of which include the Argus C-4, the Bolsey B22 and C22, the Ansco Memar, and the Bantam RF (Range Finder) cameras. The Simmon Omega 120, of most unconventional but very practical design, gives nine 2¼ x 2¾-inch pictures on a 120 roll, and an interchangeable magazine is available carrying a rotating ring of six midget flashbulbs which can be fired automatically in rapid sequence, using the same reflector. New sequence cameras include the Robot Royal; and the third of the line of Polaroid Land Cameras, the smaller, lower-cost picture-in-a-minute camera, the Highlander, is now available.

The Japanese photographic industry has been extremely active in camera and lens production.

Of the new lenses, the Germans have produced some multiple-element meniscus varieties and a number of special lenses. The Zeiss Biogon, *f*/4.5 21-mm lens for the Contax camera has an angle of view of 90 degrees, about twice the field of a normal 50-mm lens for a 35-mm camera. It is made in an *f*/4.5 version for the Hasselblad 2¼ x 2¼-in. camera. The Leitz Summaron for the Leica has a field of 68 degrees, an aperture of *f*/3.5, and a focal length of 35-mm. The Schneider Xenotar, 80-mm *f*/2.8, appears to be intended to replace the older type *f*/2.8 lenses in twin-lens reflex cameras such as the Rolleiflex, and it has been made also in longer focal lengths for press cam-

eras—up to 150-mm.

Convertible lenses, in which the front element can be replaced to provide a different over-all focal length, have recently been revived with the precision of the highest class of modern lens, particularly by Schneider and Rodenstock for the new Retina cameras. They provide three focal lengths, having a common rear element and different front elements which can be attached by a bayonet catch. The advantage is that they provide the equivalent of interchangeable lenses with between-the-lens shutters.

Improved varifocal or zoom lenses have been made for the amateur and professional motion picture field to permit changing the magnification of the picture continuously during exposure. The Pan-Cinor and the improved Zoomar lenses are typical in this field. Various lens and prism attachments have been made for producing zoom or variable anamorphic effects in motion picture projection of the wide-screen type, and Bausch and Lomb have introduced a new Cinema-Scope lens of improved definition in which the anamorphoser is built in between the lens elements rather than as a lens attachment.

Once in a while, optical systems based on mirrors instead of lenses have been used on cameras. Recently, Zoomar Inc. has come out with a series of Reflectar lenses which use a mirror system. They are particularly intended for high-definition photography at long distances and have focal lengths ranging from 40 to 150 inches.

About half a billion flashbulbs are now made in a year, representing a not inconsiderable part of the electric lamp industry. Vast numbers of new cameras have built-in flash attachments, and photography with flash is now not an adjunct, it is part of photography itself. The most recent development, taken up with much avidity, is the principle of the General Electric M-2 tiny flashbulb with a pinless miniature base which is just pushed into the socket with no turning. Most of the flashbulb manufacturers now make this type of lamp, which sells for a dime, and a handful goes a long way. Camera manufacturers are now making cameras and flash attachments which will take the new bulbs, and adapters are made for use with other holders. Most important is the requirement that the small size of the bulb demanded the design of special reflectors to ensure maximum use of the light and avoidance of a hot spot.

Since the introduction of the dry-battery electronic flash units by Hershey Manufacturing Co. of Chicago in June, 1952, there has been a marked trend to the use of dry cells, which permit very light-weight units, notable American units being made by Ascor, Strobo Research (Stroboflash) and Heiland.

Exposure meters tend to become smaller, and the new Leica Meter Model 2 weighs only 1⅜ ounces and is a little bigger than a thumbnail. Weston has a new low-cost DR (direct reading) meter pegged to 1/50 second for still photography; the Gossen Sixtomat x3 is calibrated in the new Compur "light values" and includes a color-temperature meter which

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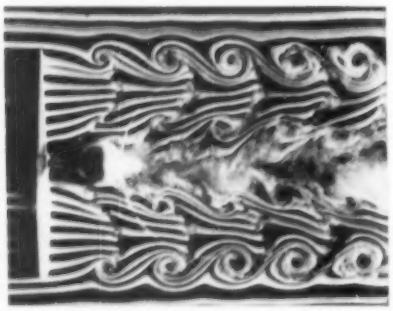
operates on a visual basis by comparing the red value of the light with a five-step variable scale; the new Bewi meter also includes the Compur "light value" scale, and an "electronic computer" which gives the exposure answer directly.

For establishing color balance, we now have a new G-E Color Control Meter which relates the effective color temperature of the prevailing light to various color correction filters for various color films available here.

A lot of thought has been given in recent years to automatic exposure control, the first practical camera being the now defunct Kodak Super-620. In aerial photography, it would be important if the lens would adjust its stop according to the measured reflecting characteristics of the subject and the Air Force has devoted much study to the subject. Bolsey has made an automatic diaphragm control for aerial gun cameras for air-to-air photography, although since it involves scanning the field of view with a television-type apparatus to find the area of minimum brightness, it is out of the question for the amateur. Bolsey has also made, however, a lens with automatic diaphragm which may well be a prototype for automatic exposure-control devices. The lens, of the same order of size as normal lenses, carries a ring-shaped photocell, the response from which is used to vary the diaphragm opening directly.



Photograph by Prof. F. N. M. Brown, U. of Notre Dame

Vortices in wake of an airplane propeller climbing at about ¾ best rate of climb are outlined by smoke dispersed in the test area.

Although amateur stereo photography has persisted in Europe since last century, it is in this country that the new great surge of interest has been evident, and a great many good-quality cameras and viewers are now made. An event of special significance was the publication of the *Stereo Realist Manual* by Morgan and Lester. This is a book well illustrated by stereo pictures, and provided with a plastic stereo viewer developed by the authors and the American Optical Company. It will undoubtedly introduce a new era of publication and advertising by stereo and add a further impetus to the use of stereoscopic photography.

The Stereo Realist, one of the pioneers in the modern recrudescence, now has a Super Realist Model ST-42 with *f*/2.8 lenses; the Three Dimension Co. (TDC) recently introduced the Stereo Colorist and the Stereo Vivid cameras, and the Revere Camera Co. the Revere 33; Lionel (of electric model trains fame) applied its mechanical experience to putting out the Linex camera and viewer using 16-mm double-frame pictures. Other new stereo cameras introduced during the year were the Kin-Dar, the Stere-All, the Wollensak Stereo 10, and the Kodak Stereo camera. The last mentioned has a number of special features, not the least of which is rapid threading, in which the film is merely laid in position, the back is closed, and winding is started. The camera is designed to enable photographers with little knowledge of exposure or distance settings to use the camera with ease.

It does not need much intuition to perceive that color photography in a wide range of applications is still on the increase. This is borne out by the reports of the manufacturers of color films, which indicate a steady increase in the use of amateur negative and reversal color films and prints and sheet films, and a marked increase in the use of color negative and positive films in the professional motion picture industry. In the international picture, there are between twenty and thirty commercial color films available, some for processing by the manufacturer, and some for processing by the user. More and more films are being made available, especially by Kodak, for processing by the customer. Kodak Ektacolor Roll Film, an equivalent of Kodacolor Film and Ektacolor sheet film, was made available in popular roll-film sizes for processing by the user, and in trade publications it was rumored that Ektachrome film would be made available in 35-mm form for C. P. (customer processing), supplementing the Ektachrome sheet and roll films.

When 35-mm color transparencies were first introduced, the problem arose as to what to do with them, for at that time inexpensive color-print services were not available. The solution was found in the introduction of the Kodaslide transparency in which the transparencies were returned to the photographer in cardboard mounts without extra charge. This required slide projectors, and some were already available for black-and-white. There are now projectors available in great variety and the past year has seen the introduction of several in improved appearance, enhanced image brightness and better picture quality, and a number have automatic or semiautomatic devices for feeding single slides or a stack of slides, and stacking them after projection. In projection the slides are cooled by air blowers.

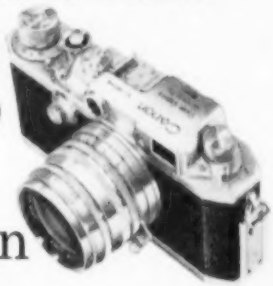
There have been photographic papers on the market in Europe for a few years in which enhanced whiteness of the paper was ensured by incorporating in it traces of material which fluoresce white when exposed to daylight. The effect is that of "whiter whites." In the United States in 1954, the Kodak Unicontrast F paper was coated on such a support.

Among the significant recent trends in processing solutions and techniques may be mentioned: the introduction by Kodak of a variety of carbonate-type developers

in single-powder form (i.e., all the ingredients are mixed together); the use of the new Ilford developing agent Phenidone in a number of developers in England, and by at least one manufacturer (Clayton) in the United States; issuing of home-processing instructions for some of the Kodak color films; increased use of concentrated liquid developers. Combined developing and fixing baths (monobaths) have had a new fling, although there is little evidence that their well-known disadvantages of speed loss, fogging, and critical behavior have been overcome; alkaline amidol has been resurrected after fifty years, but it is still unstable and good for only a few hours; good techniques for rapid processing have been worked out; there is much proper concern over the stability of negatives and prints, which has resulted in a number of means for checking for hypo and silver content, washing aids, which are solutions of salts which accelerate the elimination of hypo in washing, and have the two important properties of tending to increase stability and to shorten washing time, and so save water (BFI Hypo Neutralizer, Kodak PS 449 [Hypo Clearing Agent], Heico Perma-Wash); use of wetting agents to minimize water spots in drying; addition of agents to developers to prevent calcium sludge forming in hard water; antifoaming agents to prevent foam formation in processing solutions. There are now a number of low-current density devices on the market for electrolytically removing silver from used fixing baths. The amateur, however, will not find a bonanza in them, for they are only economical in large scale operations.

It is not possible within the limits allowed for this review to deal with many subjects which are of special interest for photography at large. It must be realized, however, that the important developments in applied photography are responsible for much of the progress of the amateur, and in any case, it is difficult to believe that he is not interested in the way his hobby can be used for most complicated, though very important, ends. The astronomer no longer looks through a telescope—he photographs through it, and all recent knowledge of the universe is due to photography. It is the serving maid of science and technology revealing the structure and reactions of the ultimate particles of matter, permitting us to see the invisible through infrared, ultraviolet, and X-ray photography, enabling the engineer and scientist to make recordings for subsequent study; arresting the motion of the fastest action, delineating the surface of the earth from the air or on the ground for mapping and military purposes, permitting the doctor to keep graphic case histories or study rare events or conditions or pass his knowledge onto others. It is an indispensable tool for the criminologist and antiquarian; in spite of the introduction of certain nonphotographic methods of copying documents, it is increasing rapidly as a means of copying for immediate dissemination of information, for protection of rare documents against the abuse of use, and also, particularly important the reduction of storage space.—

The Stackpoles take their Canons (Serial Nos. 78291 & 77576) on an Underwater Vacation



When Peter and Hebe Stackpole vacation, they often spend much of their holiday underwater, for they are the nation's most enthusiastic underwater-photography couple! And quite naturally, they take their Canon cameras with them, because Canon is ideally suited to even this unusual photographic task. Whether exploring the ocean's sub-surface, or up among the outer strata of earth, Canon's simplicity of controls, and complete versatility, make it the professional's No. 1 choice!

The unusually wide angle of view and edge-to-edge sharpness of the Canon 28mm f:3.5 are most appreciated underwater . . . because the water itself acts as a lens, cutting the normal lens angle down.

Pete is an old hand underwater, having made some of the first watertight housings. This is Pete's latest, shown with his Canon in operating position. All controls are accessible from the outside, providing him with all the maneuverability of the land-lubber's camera. It wouldn't surprise us if he designs a housing to change film underwater, too!

Here Pete is artistically framed by undersea wreckage . . . an underwater "candid" by Park Breck of Bermuda.

Here's a friend of the Stackpoles in a miniature diving helmet, playfully feeding some underwater acquaintances by hand. It's like living inside a goldfish bowl! This shot was made by Hebe, who is shown at the right with her camera rig.

Peter and Hebe Stackpole are among the many serious camera enthusiasts who have chosen Canon. Whatever your particular pursuit of photography . . . the exacting precision of the professional . . . or the demanding versatility of the amateur, Canon is a sound choice. Write for our free booklet, "Canon Means Versatility." It's "must" reading for the serious picture-taker!

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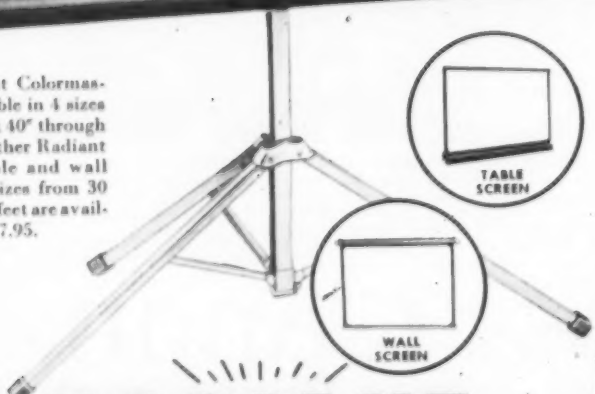

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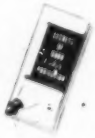

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MARVIN MARX (left), writer for *The Jackie Gleason Show*, CBS-TV, his partner, Walter Stone (right)

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YOU CAN build your home comedies the same way my partner, Walter Stone, and I build a nation-wide television show. The techniques and basic situations we use can easily be adapted by an amateur.

For us, most situations are the outgrowth of "a man in trouble" idea. Almost any man faced with an everyday problem which he believes he can easily solve is meat for humor. In writing our scripts, we follow through on three levels. First, we state *the problem* through our character's action. Second, we show his *attempt at a solution* or a build-up of the tension. Third, we have him caught in an ending which either *blows up* in his face or has a *surprise twist* to it.

Let me give you an idea of what I'm talking about.

The Problem: You have a fellow coming home after a hard day at the office. He expects to sit down for a few minutes before dinner to relax and read the evening paper. As he sits down, his kids come running in, screaming at the top of their lungs. They climb all over him, pull his tie, muss his hair, and crumple his paper.

Attempt at Solution: The next day, our subject comes home with a large package. In it is a play pen. After assembling it, we see him standing in front of it, smiling confidently as the scene fades out.

The Surprise Ending: The next scene finds him sitting serenely in his easy chair reading his (*Continued on page* 109)

HUMOR DOESN'T always have to depend upon a fully controlled script. Quite often you will find people doing amusing things when they are confronted with an unusual or unexpected situation.

That is the theory upon which we operate our hidden-camera technique, and one which you can easily use to create a funny film of your own.

In our work, we hide a camera and then hit an unsuspecting person with one of two types of conditions. In the first, we take a situation which is ordinarily familiar to people and then add an unexpected twist to it. The second condition is to confront an innocent victim with a situation that is completely unfamiliar to him.

People's reactions to these conditions quite often have everyone laughing, including the victim when he finds he has been hoaxed.

Here is an example of the first. We hide a camera so it is facing a closed door. Then we loosen the knob so that when a person tries to open the door, the knob will come off in his hand and can't be replaced. Then we wait to see what happens.

Many people don't know quite what to do. Some lay it on the floor and walk off. Others will pound on the door. And, we have even had people put the knob in their pocket and take it with them.

Under the second condition, we have done this sort of thing: We find a room or building (*Continued on page* 109)

THE OLD-TIME silent movie directors created their humorous films from three basic conditions which you can find in everyday life. By understanding these conditions and by using them, you will be able to shoot effective home comedies of your own.

They are: The struggle between man and man, or man and an object; the unexpected; and by the use of contrast.

In my work, I have seen hundreds of silent comedies. In each of them, there was present one and often more of these basic elements.

Let me illustrate with some of the classics in our files.

For the struggle, there is Charlie Chaplin's film "One A.M." In it, Chaplin comes into his bedroom slightly under the influence of alcohol. His bed, operated by pushbuttons, not only folds into the wall, but also has a spin to it like a revolving door. As he pushes the button, the bed comes down and then snaps right back into the wall. He tries again with the same results. Once more he pushes the button, only to be whirled into the wall as the bed goes through its gyrations. The sequence ends with the bed finally coming down—right on top of him.

Another early silent film that pointed up the element of the unexpected or surprise starred Harry Langdon.

Langdon is a machine-gunner during the war (World War I). He is struggling with his weapon, trying to get it to work so he (*Continued on page* 110)

Turn to next page and see how these ideas were used for a film

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The bachelor and the baby

Shot 1--Stating basic problem . . .

Shot 2--The build-up . . .

CAST

ORSON BEAN, the bachelor

JAYE SMITH, the baby

SCRIPT

Shot 1 --Stating problem with medium shot showing a towering bachelor and tiny baby.

Shot 2 --Medium close-up showing bachelor with situation completely under control.

Shot 3 --Sudden discovery of diaper-changing problem. Medium shot with look of horror on bachelor's face.

Shot 4 -- Medium shot, view from side, showing try at putting diaper on.

Shot 5 -- Introduction of suspenders as method of keeping diaper on. Bachelor holding baby up by suspenders. Diaper in tangle.

Shot 6 -- Bachelor, with look of complete frustration, resting near baby.

(Continued on page 110)

Shot 3--A throw-back . . .

Shot 4--Attempt at solution . . .

EXPERIENCE LEADS TO BELL & HOWELL

Photographs by Harvey Shaman

Shot introducing new situation--entertaining baby . . .

Shot 5--The results . . .

Shot 6--Calm between storms . . .

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YOU'LL LOOK FAR to find an 8mm fan who wouldn't like to own a Bell & Howell 134-TA Tri-Lens. Turret rotates lens and viewfinder instantly. Full-frame focusing keeps movies sharp—all over. One of five speeds can catch a hurdler in slow motion, a jet flying. Drop-in spool loading. The 134-TA is only $129.95 (auxiliary lenses are extra).

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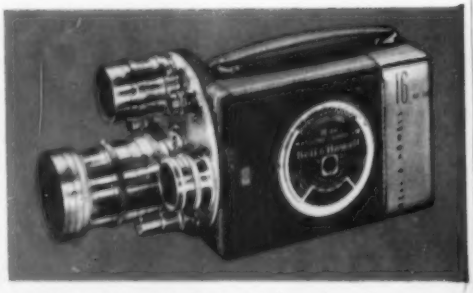


200-TA AUTO MASTER has three-lens turret, five shooting speeds. For 16mm fans, an investment in precision at $264.95, with 1" f/2.5 Comat lens.

◀ **REGENT PROJECTOR** with 500-watt lamp outshines all other 8mm projectors, regardless of lamp wattage. Has all gear drive, power rewind. $179.95.

MOVIE TITLE TECHNIQUES

From signs to finger paints, imagination pays off

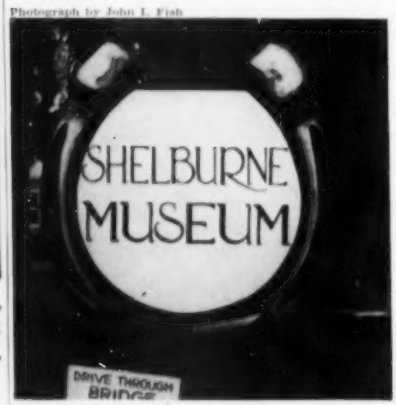
TITLES for home movies can be made using techniques shown in *Make Your Own Title Slides*, appearing on page 66 of this issue. Besides employing these methods you can buy one of the many movie-title outfits available through your local photographic supply dealer, or you can make a simple fixed-focus frame. The size of your frame will depend upon the lens and supplementary lens you will use on your camera. Use the crossed-yardstick method explained in the slide-title article for determining the correct frame size. Regardless of the method used, always remember to keep the lens aimed at the center of your title and make sure the title is large enough to fill the film frame. Mount the camera on a tripod to prevent jumping titles.

What about lettering? Stick-on plastic letters can be carried for use "on location." They can be applied to a pane of glass, which you can carry with you and set up before a natural background. Such titles will tie in your words with the subject you have photographed. Or the letters can be used on a car window if you'd rather not cart a pane of glass along.

Finger painting may be done directly on a window pane. The average-size window will fill a movie frame at minimum focusing distance. Use thick paints to prevent running. For good separation, paint on the outside of the window, if possible, and use daylight as your source of illumination. Back the glass with white board or paper.

You can combine several techniques, such as a finger paint and cutouts or plastic letters. Also try shooting the various signs that appear during a trip. Imagination counts more than ability in making titles and an interesting title, while not perfectly done, will create interest. A good introduction to your films will make your audience await your projected efforts with anticipation.

Photograph by John I. Fish



Signs shot on location represent one of the easiest ways to introduce your film stories.

pect that he or she is being tricked until and many people will ask why they are

Comedy Film: MARVIN MARX

(*Continued from page* 105)

paper. As the camera pans you see that the chair is in the crib and his youngsters are running madly around the outside, unable to get in and bother him.

Or, here is a situation with a backfire ending.

The Problem: Our hero is carefully balancing a bucket of water above a closed door.

The Build-up: One of his friends comes along and unsuspectingly walks through the door. Nothing happens to him.

The Backfire: Our hero is completely puzzled by this, and goes to look. As he opens the door, down comes the water.

How long should your film be? I suggest you stick to short vignettes of not more than about three minutes. That will just about cover one small reel of 8-mm or 16-mm motion-picture film.

To put across an idea which might be difficult to show with actions, you can adopt an old-time movie technique using title cards written in a humorous vein.

You can create humor through the mechanics of your movie camera. If you have one on which you can control frames-per-second speed, you can get rough, jerky motions in your subjects by using slower-than-normal speed. Or you can use slow motion to emphasize some unusual action. By shooting stop-motion —one frame at a time—you can also get humorous effects. For example, a man plants a seed. Frame by frame you shoot several different tree props, one always larger than the last until you have a full-grown tree. In your film, it will look as if the tree sprouted up in seconds.

These are mechanical tricks, and you will have to use them as you see fit in creating your own humor. The important thing is this: you can't have humor until you figure out a potentially funny situation, and how you are going to exploit that potential. So, before you touch your camera and film, sit down and do a little work with paper and pencil.—▶

Comedy Film: ALLEN FUNT

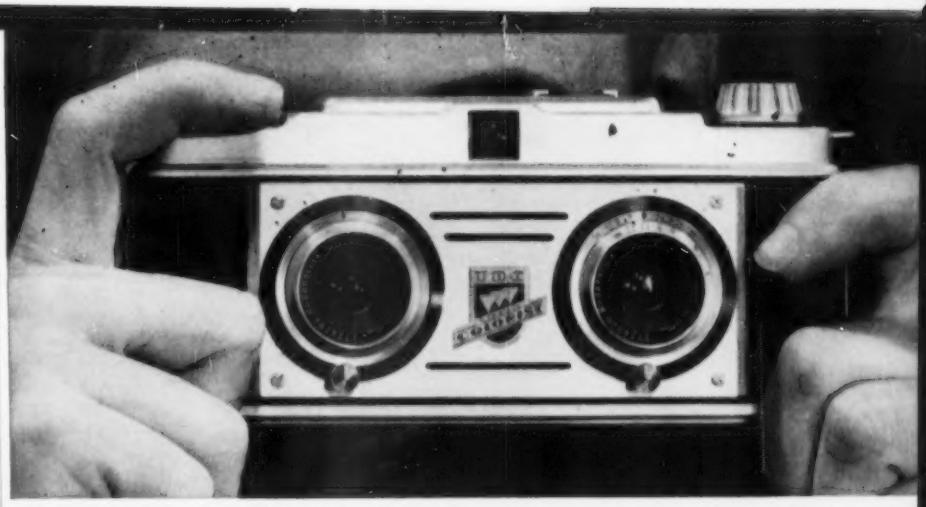
(*Continued from page* 105)

with only two entrances. On one of these entrances we put the sign "Danger, Do Not Enter." On the second we put a sign reading, "Do Not Enter, Use Other Door." This sort of situation can make a person do all sorts of things, especially if he wants to get into the building badly enough.

One reaction you will find from people is that they will have the courage to do things when someone is with them that they wouldn't do if they were alone.

One time we set up a cake on a kitchen table. A slice had been cut out of it, and on the table with it was a knife and clean plate. When a kid came on the scene alone, he would look, but wouldn't touch it. When two or more kids showed up together, however, they would almost invariably cut off a slice.

In shooting this type of humor for your own home movie, you should always keep in mind that the victim must never sus-



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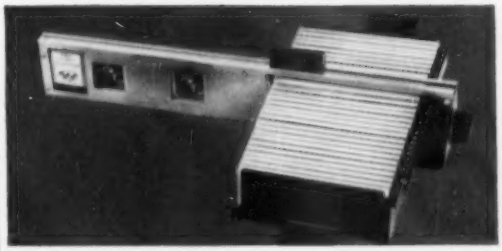

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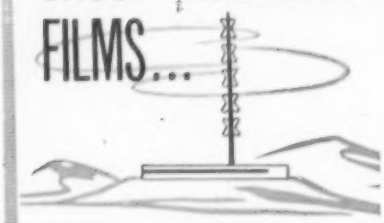

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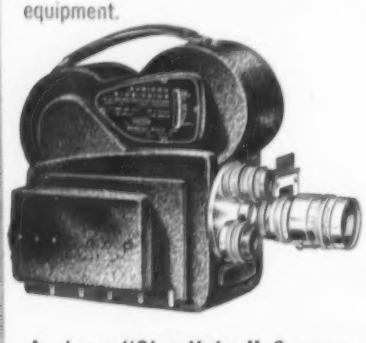

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pect that he or she is being tricked until the action is complete.

This means your camera must be set up behind a screen or in the shadows in another room. Quite often we make use of a one-way mirror to hide the equipment. A radio playing in the background will effectively kill the noise of the camera. Or, if you have a telephoto lens, you can shoot with the camera far enough back that it won't be heard.

Of course, the lights can't be hidden, and many people will ask why they are so bright. We have found that a firm answer will satisfy them. Something like this will work. "Gee, I've been wondering about that myself," or "They must be crazy, they don't need that much light in here."

This is a different approach to humor, both in the shooting technique and in the actual method of creating it. It is one that you can effectively use to shoot a funny film of your own.—▶

Comedy Film: JOHN ADAMS

(*Continued from page* 105)

could shoot the enemy. The gun refuses to cooperate, however. Quickly, he has to find another solution to his little problem. So, he pulls out a slingshot and starts popping away.

A second Chaplin film makes perfect use of contrast. Chaplin is shown eating in a very dainty and refined manner in a restaurant. Next to him is a man who is grunting, sniffing, snorting, and putting away food as if he was eating his last meal. Despite his apparent meekness, however, Chaplin is getting even with his neighbor for his bad table manners. For, everytime the glutton happened to look away from his plate, Chaplin swiped some of his food.

These are things that were used in some of the greats of movie history. By looking right around home, you will find similar situations that you can exploit. How often have you noticed the man next door clipping his hedge, or burning leaves or watering his lawn. Let's take one, say the lawn-watering operation, and see what we can build.

First, we need a couple of shots to *establish the situation* or set the scene. We might have a man taking a hose out of his basement, carrying it to the front of the house and connecting it to the spigot.

Now, let's show a *struggle*. A close-up shot, perhaps will have him wiping the sweat from his forehead to indicate he is hot and thirsty. What is more natural than to drink from a hose? So, he adjusts the nozzle until the water is coming out at a trickle. He bends over and raises it to his mouth to drink. As he does so, the water dribbles to a stop. Let him do this several times, and perhaps give the hose a shake or two as he tries to regulate the flow of water.

As for the *final punch*. You know what is going to happen, of course, but that doesn't make it any less funny. He gives up in disgust and decides to continue watering the lawn, but no water comes out when he turns on the hose. He twists the nozzle a couple of times and then takes a look at the end of it. The water comes out, right in his face.

If you have a chance to see some of the old silent comedies, you'll find them excellent training grounds for your own home-grown humor, for the techniques used in them are just as valid today as they were thirty or forty years ago.

There are other things to keep in mind, however, if you want people to laugh at your efforts. A comedy must be a very personal thing, so make it about things which your family and friends know and in which they can appreciate the humor. Also, don't make the mistake of trying to inject bits of slap-stick or out-of-place humor into an otherwise serious home movie. Build a complete comedy.

In shooting your movie, keep in mind your audience, and how they are going to react to it. It is easy for them to become bored, so keep it short. Let me repeat that. Keep it short. Four or five minutes is tops.

Use a series of short sequences rather than one long scene. You should keep your camera in position only long enough to get a picture which registers and makes an impression on the viewer, then switch to another spot or angle. You might keep in mind the movie standby of the long, medium, and close-up shots to give pace and movement to the film.

And remember, you want the actors and their actions to be the center of interest, so keep the lighting and backgrounds simple and unobtrusive.

By using these techniques, plus the elements of comedy—the struggle, the unexpected, and contrast—you will find your audiences responding with laughter when you show your own movies.—▶

THE BACHELOR AND THE BABY

(Continued from page 106)

Technical Data: Three RFL 2's were bounced against the low, white ceiling of the apartment. They gave out enough light to allow shooting at *f*/4.7, 16 frames per second. The lights remained in the same position all during the shooting session.

Pre-shooting procedure: Before Orson Bean, or the baby, was brought before the camera, the section of the room near the couch was carefully analyzed. An assistant sat in positions that Bean would later assume. The background was carefully checked through the viewfinder to make sure it remained plain for each shooting angle. Light-meter readings were taken of the stand-in "actor" as he moved about, to make sure that the light was evenly distributed.

Dry Run: Before shooting each of the sequences on film, Bean was asked to go through the motions before the quiet camera. After this the scene was shot. During dry runs better shooting angles and expressions are often discovered. Making a habit of doing this will often save you much time, film, and money.

Shooting: Bean acted out the script and the baby was allowed to do whatever she pleased.—▶

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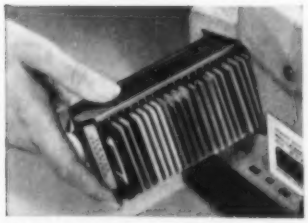

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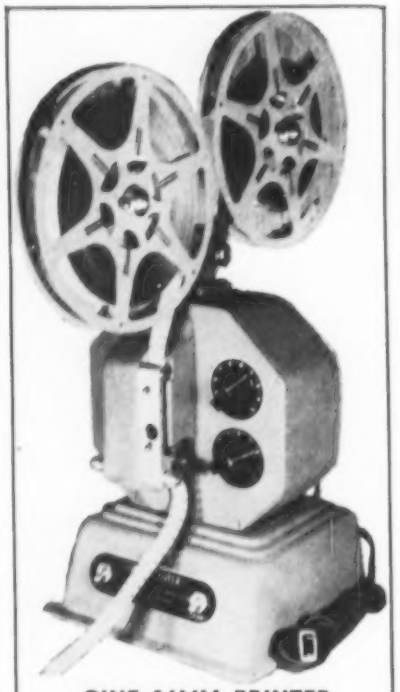

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Ernst Haas—Adventures in Seeing

(Continued from page 79)

their sons who hadn't come back, I dropped the fashion assignment on the spot. I knew that if the editors saw these pictures, they would forget about the fashion pictures," Haas said. He was right. *Heute* ran his now world-famous pictures over twelve full pages. The editors of *Life* also saw these pictures and Haas made his first sale to an American magazine.

In Paris the late Bob Capa, then forming his famous co-operative picture agency, Magnum, saw the PW pictures and wired Ernst to come to Paris and join his group. Haas thus became the eighth photographer to adopt the Magnum label. The seventh was Werner Bischof, who became one of Ernst's closest friends.

Under Magnum's banner he became a world traveler. France, Italy, Greece (where he did his remarkable and widely-published "Miracle in Tinos" picture story on a Greek Orthodox religious pilgrimage), England, Egypt, Ireland, Indochina, Indonesia, Africa, Mexico, and the United States are only some of the places he has visited and photographed in recent years. But if Haas, the traveler, is a hard man to pin down, so too is Haas, the photographer.

When he broke with pictorialism in the early post-war Vienna years Haas admits that at first he "only looked for expressions and human interest." But this was merely a passing phase, an immediate reaction against the hollow sentimentality of the phase which preceded it. Haas realized that straight, head-on documentary pictures were not enough for him. He felt that he must look at the world realistically, subjectively, but most of all visually. Composition and design became more and more important to him, and in his photo essays the influence of his earlier interest in pictorialism and abstract design became increasingly evident.

"The job is very much harder," says Haas, "because I try always to combine a new kind of seeing and composing with a human approach. Pictures must reflect a personal philosophy.

"Cartier-Bresson always has his philosophy in his pictures. He is a remarkable man and his style is a kind of handwriting. He can express any country or thing and always he remains Cartier-Bresson.

"But when I find that I have a style I get bored with it almost immediately and try to destroy it. I must always try new ways or new things. I do not ever want to do things so much in one direction that I can be typed or classified."

In this regard, however, he has not been altogether successful. A "photographer's photographer," Haas is the kind of guy whose pictures are the frequent subject of dissection by other professionals. He cannot prevent them from using the phrase, "a Haas-type picture." For many people this means a fusion of candid photo-journalism with a pictorial concern

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for composition, an emphasis on content but an interest in form as well. (See the Nile landscape in color on page 68 and the man carrying a bundle of kindling, bottom of page 73). More than most other photographers, Haas has been able to achieve a happy marriage of journalism and pictorialism.

Another Haas-type picture brings into unified relationships all kinds of incongruously assorted items that were quite unrelated until Haas' eye and camera brought them together. The color shots of London, top of page 68, show this ability to achieve a startling juxtaposition of unrelated forms. Sometimes, too, these pictures have a quixotic touch of humor; his camera gives a sidelong glance at life that makes you smile before you realize that the picture has told you something that only this light touch could convey so effectively.

His great strength, of course, is that this "typing" is necessarily a loose business. Haas is not the kind of photographer whose work you will always recognize at first glance. Primarily this is because his style is so adaptable and varies to be appropriate, not merely to Haas, but to the subject matter at hand.

Two of the most popular, and we believe fraudulent, ideas about photography are (1) that a good photographer must be a top-notch technician, and (2) that a good photographer must be ignorant of photographic technique. Haas is neither. He is, instead, a man deeply concerned with making his own kind of pictures to express his own ideas. His aim is to learn whatever he needs in the way of technique in order to get the pictures he wants. Ernest is the first to admit that there are undoubtedly millions of people in this world who know far more about camera lore and darkroom magic than he does. The mark of the real photographer, however, is not so much his knowledge of photographic chemistry and physics as it is his knowledge of what he wants in his pictures and the strength of his determination to obtain just this and no less.

Like most professional photographers, especially those who travel extensively, Haas keeps his equipment as simple as possible. Most of his pictures are made with the Contax or Nikon 35-mm cameras, for which he has a variety of lenses ranging from a 28-mm wide-angle to a 180-mm telephoto. The focal lengths that he prefers for most of his work, however, are the 35-mm and 50-mm lenses. Often he will compromise by using one of those rare old 40-mm f/2 Biotars which Zeiss made in limited quantities during the early '30s.

When he was in this country during 1951 and '52 Haas did a good part of his own printing although he seldom developed his own films. Luckily for Haas there are in New York and Paris (the two cities in which Magnum has its main offices) custom photofinishers who cater only to professionals and turn out negatives and prints to suit highly individualistic temperaments, and he relies heavily upon several of these organizations to do his lab work. But when the technical

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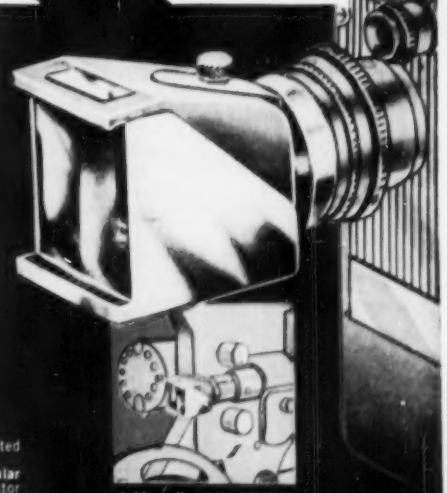

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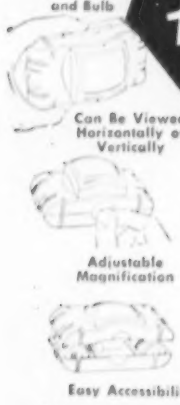

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print quality is of great importance to the picture, or when the labs fail to carry out his ideas, Haas will go into the darkroom and wrestle with an obstinate negative, discarding heaps of 11x14 enlarging paper until he achieves the print he set out to get.

On assignment Haas is quick, quiet, and unobtrusive. While he does like to catch people's reactions when they are unaware of the camera's presence he does not belong to the cult of invisibility which resorts to subterfuge in order to conceal the fact that a photographer is at work. Instead, by making himself a part of the group which he is photographing, he attempts to extract from each situation those fleeting instants which sum up or exemplify the thing he is trying to express. One of the stories he tells at his own expense concerns a lady he photographed at a cocktail party which he was covering in New York. After shooting several frames as she was engaged in animated conversation with her escort, he turned away, mentally congratulating himself that the lady had been totally oblivious to his activities, but just at this moment his subject looked toward him and inquired brightly: "Was I sufficiently candid?"

As a professional, Haas has worked on many assignments for many magazines. He has descended beneath the Hudson river to document the rough job of a sandhog for a leading men's magazine on one day and has shown up the next at a dancing school for the offspring of high society, as the representative of a leading ladies' fashion book. But assignments never seem to keep Haas happy for very long. Once after completing an assignment in Chicago he suddenly decided to head out west. With a few necessities, aside from cameras and film, that is, he hitch-hiked clear out to New Mexico. Here he wandered through a world he never knew before and captured its beauty with a sense of wonder so compelling that *Life* ran six pages of his impressions.

This young Austrian's ability to get close to his subjects is demonstrated by one incident during his New Mexico adventure. While visiting an Indian village, Haas was aghast at the way some tourists were violating the inhabitant's hospitality—noisily entering homes, picking up babies, and in general behaving as if they were at a sideshow. Noticing the pained expression on the face of the village chief beside him, Ernst turned to him and inquired: "But why don't you scalp a few of them?" This remark so endeared him to the Indians that he became their honored guest and was permitted to photograph certain tribal ceremonies usually forbidden to photographers.

While he was in New Mexico Haas shot one roll of 35-mm Kodachrome. We mention the fact only because this was the first roll of color Ernst ever shot. Immediately afterward he began work on his famous color coverage of New York, which ran for some twenty-five pages in two consecutive issues of *Life* magazine.

Shooting New York in color occupied most of Haas' days and nights for almost two months, in the course of which he shot about 150 rolls of Kodachrome. Editing himself ruthlessly, the collection of slides selected for final presentation grew painfully, slowly. With only a few rolls' worth of experience behind him, he often didn't know what he had until the films were mailed back from Rochester. Once he photographed a reflection in the shiny black marble facade of a building on a busy Manhattan corner and drew a crowd of wiseacres convinced that he was deranged. But he knew what he wanted and made one exposure after another, letting more and more light in. He got his picture. In checking through several of the better-known works on color photography we fail to find any reference to shooting color at a black mirror image, and if any of the authorities would like some inside information on this we suggest they contact Haas. Haas' advice for this or any other photographic problem is: "Go and try it. If it doesn't work, go back and try something else."

These wonderful pictures of what *Life's* editors called a "magic city" provide another example of what happens when a photographer knows what he wants and is willing to search for it relentlessly, even if he must educate himself technically as he goes along. While the story was still in progress Ernst once showed some of the slides to a group of his friends. One photographer was so impressed by a picture which was almost a monochrome in gold and black that he demanded, "How in the world did you manage that?" "But that is how it was," replied the puzzled Haas, who just didn't realize that this particular picture presented special technical problems. Spoofing those who have rigid technical criteria for deciding what constitutes a good color picture, as well as those who overemphasize the necessity of soaking up technical legerdemain, Haas said some time later in answer to the question "What do you really know about color?": "When the pictures come out I am amazed. When they don't they are published."

Just before he left New York several months ago we asked Ernst to tell us what he got out of his life behind a camera. This is what he said:

"For me, being a photographer is like being always a student in a great university in which every day I learn about the world. Sometimes I think 'If I were in a real university, what classes would I have attended today?' But I never can finish the answer because everything is so mingled and mixed-up with everything else in my university.

"I want to be as broad as possible. The magazine photographer today is a kind of counterpart of the traveling bards of the medieval period who expressed their age in song. We live in a visual age and eventually I believe that we will develop a visual language.

"For some photography is only a profession, but it can also be a dream. It is a means through which a young man can come to know life deeply. The photographer must always be a witness to life—he can never get anything second hand."—

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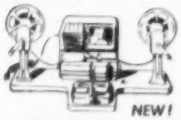

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Pictures Around You

(*Continued from page* 65)

photographs employing the very symbols of our city life (the walls of an apartment building or a street lamp or bus sign) and avoiding the use of superficial darkroom techniques. That is to say, these are straight photographs, using only selection of angle as a tool, and yet they seem to have been taken in some strange, inaccessible place." There is more to it, of course, than this. If "selection of angle" is a tool, so is the eye itself, the eye that knows when the parts of a picture have fallen into place, and when the commonplace has been transmuted into the extraordinary.

Mentken wasn't a photographer from the beginning. He went to art school—Cooper Union in New York City—where photography was one of the required courses, like design, lettering, typography, and the elements of esthetics. In the photography course, the first assignment was to get hold of any kind of camera and shoot a roll of film with it, and bring in the results a week later. The purpose was to see how the art students "thought photographically." The instructor emphasized that it was better to bring in a set of underexposed box-camera negatives with a fresh approach to a subject than to present a stack of perfectly exposed 4x5 negatives with hackneyed treatment of a dull subject. Mentken responded readily to this kind of photography; it has stayed with him as much as the other skills he learned at Cooper Union.

He speaks of his camera work with intensity and conviction: "My concern is with the two-dimensional translation of a three-dimensional world, the possibilities of which are as infinite and varied as life itself, and therefore, exciting. One *must* be excited by his subject matter, or nothing will come of it. . . ." "It is more important for a photographer's sensibilities to be wide open than for his lens to be wide open. It is more important for his brain to react instantaneously than his shutter. A photographer must be sensitive. He must have that necessary gift of any artist, the acute awareness of anything that happens within the range of his senses."

Mentken makes his pictures with a Rolleiflex, and shoots with the *idea* of cropping in mind, leaving the actual framing of the picture for the enlarging easel. "I have discovered," he says, "that my work is not the result of the single act of tripping the shutter release, but rather a series of related ideas or thoughts that starts the moment I see something that attracts me and ends when I trim the final print."

Most of his pictures are taken outdoors under an overcast sky, where the tone values of subject matter are not affected either by the "arbitrary light of the sun" or the "artificial control of studio light." His subjective approach, which is well reflected in his pictures, he explains this way: "To me, the place for creative and dynamic photography is outdoors where you can bring two

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Mentken's is a provocative and stimulating kind of photography. Whether you're amateur or pro, it can help you seek and find the pictures that are around you.—

New: The Retina IIIc

(*Continued from page* 59)

The number of shots taken is tabulated on a film counter that works in reverse from 36 or 20 down to 0 to keep the user informed as to how many exposures remain. There is also a clutch device that disengages the film counter from the shutter as a convenience to those who want to switch from one type of film to another in mid-roll, and a film release for making intentional double-exposures.

Flash synchronization adjustment is simplicity itself, with the indicator lever placed at "M" for standard foil-filled Class M flashbulbs that peak in about 20 milliseconds and at "X" for electronic flash and for Class F "gas-filled" flashbulbs peaking in about 5 milliseconds. Class F lamps can be used at all speeds up to 1/125 second and all other flash sources at all speeds including 1/500 second.

When the synchronization lever is moved to the "V" position, the built-in self-timer (delay) mechanism is put into operation, with the synchronization set for "X" delay (electronic flash and Class F).

But the big news is the split-element design of the three lenses furnished with the camera. The normal lens furnished with the camera is a 50-mm $f/2$ unit with six elements. The three elements of the rear component are permanently mounted behind the diaphragm and shutter. The front three-element component is attached to the front of the shutter in a bayonet-locking mount. For semi-telephoto effects the front component of the normal lens is removed and replaced with a six-element Kodak Retina Longar Lens Component which, combined with the three-element component behind the shutter, forms an 80-mm, $f/4$ objective. For wide-angle effects, the front component is replaced by a six-element Kodak Retina Curtar Lens Component which in combination with the fixed rear component forms a 35-mm $f/5.6$ objective. The camera rangefinder is coupled only to the normal lens, but can be used to indicate manual focusing settings on the long and short focal length components. For observing the correct field of view with the telephoto and wide-angle units, however, the Kodak Retina 35-80 Optical Finder must be used. This accessory features a "flip-to-choose" mask which projects from the top of the housing. In the forward position, it outlines the field of the 35-mm wide-angle lens, and in the rear position, the angle is restricted to

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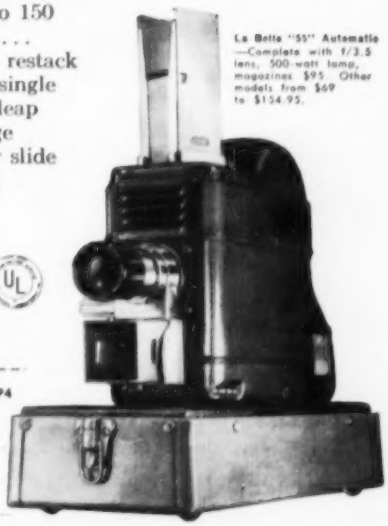

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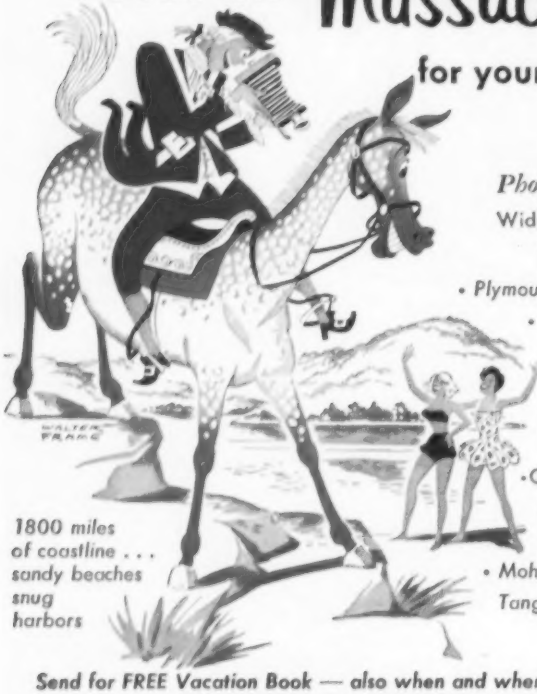

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We finally have our color laboratory . . . dye transfer prints from Ektacolor and Kodacolor negatives. As I write this I'm looking at matrixes for 27 different color prints which are hanging up to dry . . . all from widely varying negatives . . . every one perfectly exposed. Not a test exposure was made — every single one was from a Spot-O-Matic reading . . . a stock meter from our shelves. Every time we expose a 16 x 20 set of matrixes for our gang printing we bet more than the price of a Spot-O-Matic in labor and materials. We make these exposures without hesitation and without test strips. If there was any other instrument — if it cost fifty times as much — electronic or any other kind — which could do this job better, we'd be using it. For example, we have a color densitometer with which we get our color balance. But our Spot-O-Matic has proven more reliable for exposure measurements because it reads the light as *it is* — right on the easel — and reads the smallest areas of the *enlarged image*.

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that of the 80-mm telephoto unit. Parallax is corrected by means of a wheel on the rear of the finder.

The small exposure meter that is built into the top of the camera body is a feature that should be seen more often in the future. It is not coupled to render automatic exposure, as some others have been in the past, since most photographers have proved that they prefer to control this part of picture-taking themselves. Though it operates much the same as an individual meter, it is calibrated in light values to simplify the process of converting the light reading to a combination of shutter speed and *f*-stop. This fine meter is compact and tailored into the Retina body in the position formerly held by the rapid film advance, which has been moved to the bottom to an even more convenient position. The meter operates over a wide range of light sensitivity and when compared with a costly and much larger individual meter showed as much reaction in poor light. A metal, hinged cover swings down over the photoelectric eye in bright light to restrict the passage of light to a small opening in its face. This cover is also fine protection for the somewhat delicate and exposed glass of the eye, since it remains in place for a majority of the pictures shot with the camera. The manufacturers have even thought to satisfy the adherents of incident-light-reading meters by supplying a metal-framed, snap-on plastic cover that converts the unit to this purpose.

Once the light value has been determined from the meter's light-scale pointer (or with any other meter or exposure table calibrated in light values), the diaphragm control lever on the face of the shutter is adjusted so that the light-value pointer aligns with the applicable light-value number. If the shutter-speed setting on the speed scale isn't satisfactory for the picture being shot, the photographer need only reset the control to the desired speed and the lens diaphragm will automatically open up or close down to the *f*-stop, producing the correct exposure for the prevailing light value. The diaphragm control lever can be adjusted independently of the shutter-speed setting if the photographer prefers to disregard the light values. To facilitate the reciprocal operation of the shutter and diaphragm control settings in equal steps, the shutter and diaphragm are both calibrated in linear scales where each value is exactly half or double each preceding speed or lens stop. Also, a limiting arrangement keeps the diaphragm from opening up wider than the largest opening of the lens in use. It is impossible to set the diaphragm on *f*/2 with the *f*/4 telephoto lens in place (it makes no real difference, but it is more practical).

Although both Heligon C and Xenon C lenses will physically fit the lens mount of the Retina IIIc, only the Xenon lenses will be imported and recommended, since combining lens components of different manufacture does not usually produce the best possible results.

With the standard 50-mm *f*/2 lens, the Retina IIIc has been priced at $185. The front components of the 80-mm telephoto lens cost an additional $82.50, and the

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Though this new camera has a lot of intricate machinery compressed into a quite-small package and some adjustment is necessary before the user can feel at home with it, it clearly presages a new trend in cameras of the folding type. The light-value system is bound to stay, and the day can't be far off when auxiliary lens components will be available for all high- and middle-class cameras with between-the-lens shutters.—*Dan Becker*

How This Picture Was Made

(*Continued from page* 57)

set a light meter on a tripod and stationed an assistant near it. His job was to tell us when the light meter needle was at a given point so we could make an exposure. We were lucky. On the day of our shooting we had an overcast sky. The light quality was wonderful, and it changed very slightly.

To get a better balance between indoor and outdoor lighting, the room lights were left on. All our exposures were 1/5 second at *f*/8. (After much experimentation we found we could not shoot at a smaller aperture than this because extra depth of field started to pick up images from mask lines.)

Henry Groskinsky

Photographer Morse (behind camera) checks position of the teacher at desk. Canopy over the set kept out stray light, reflections.

Camera and Lens: We used a 5x7 Deardorff camera that had a 4x5 back, and a 4-inch Wide Field Ektar lens. This lens gave me all the coverage we needed.

Film: Super Panchro-Press, Type B.

Tripod: Since the slightest bit of camera motion would ruin our picture, the type of tripod we used was extremely important. (For illustration purposes we used a light-weight tripod on the opening spread of this story.) Actually, we used a heavy-duty Saltzman tripod. All bolts on it were well tightened before we put the camera on it. It had to be solid.

Glass and Stands: Heavy-duty light stands supported the plate glass in front of the camera. Four aluminum "C" clamps cushioned with sponge rubber held the glass to the stands. The glass plate had to be completely rigid, also.

Plate glass was selected instead of sheet glass because the latter had distorted wave-like patterns running through it. Our choice was No. 1 plate glass $\frac{1}{16}$-inch thick. (We selected this glass after much experimentation involving more than 20 different types of glass. Odd effects were produced with glass that was not $\frac{1}{16}$-inch.

The plate glass was placed in a position in front of the camera parallel to the film plane, exactly four inches away from the lens. This distance was also determined by experimenting. We found the glass should be the same distance away from the lens as the focal length of the lens.

Canopy: A canopy was built over the camera and plate glass so that no stray light would bounce around and create streaks or cause reflections on the glass.

Masking: In making our masks, we first placed a sheet of acetate over the plate glass. With a grease pencil we circled the areas where the teacher would be at various times. We had her pose in each position, and marked our circles around her. All sighting was done through the groundglass back of the camera. In this way we made sure that none of our masks overlapped. (Overlapping would cause double images.) Also, each position that the teacher assumed was marked on the floor with chalk so she could return to the exact position when we were ready to shoot.

In some areas, half a child would be photographed during one exposure, and the other half on the next exposure. We hand picked the children who could sit still for a long time and placed them in seats in this area.

Heavy black paper was used for our masks so there would be no reflections on the glass.

The first mask was cut out carefully to follow the pattern of our acetate, and was attached to the camera side of the sheet of glass. Then we made a second mask for the front side of the glass. This was done so no stray light rays could be let through to make ghost images. The outside mask was cut with circles $\frac{1}{16}$ inch larger than the inside mask (to allow for the fact that light rays are bent as they pass through glass).

It took about an hour to cut out a complete mask. The slightest mistake with the knife and the mask had to be started over again. After the mask was cut, it was placed in the same position that the acetate was in.

Exposure: The first exposure was made with five circles of black paper on the glass. These masks held back exposure of areas where the teacher would later stand. On the second exposure, the overall mask was placed back over the mask circles and one circle was removed.

The teacher took the second position. The shutter was cocked, and the second exposure was made. For each of the other exposures the same procedure was followed with the exception that different masks were removed.

The picture and the on-location experimentation took 48 working hours to make. Our job was a success.—

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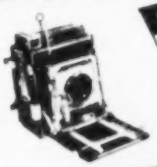

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Candid Shots

(*Continued from page* 48)

It is not competitive in any way with Ansco Supreme pan roll film, which also has a 64/50 speed rating and which will continue to be available in the same roll-film sizes as well as in 35-mm and 70-mm widths. Ansco Pan has somewhat higher inherent contrast than Supreme, a slightly-coarse grain pattern

New packaging for new Ansco Pan: bright red body, white ends, small blue panels.

(which is quite adequate for moderate enlargements), and somewhat less sensitivity to red than Supreme, which is a so-called Type B pan material.

Once again Ansco has reaffirmed the pioneering attitude that in 1931 produced the first "fast" orthochromatic amateur roll film, Plenachrome, which could take snapshots in the rain, as well as the first "superspeed" panchromatic film—Ansco Ultra Speed and Superpan Press (in 1937), the result of newly developed red sensitizers. Ansco All-Weather Pan—their latest development—is the result of a new emulsion technology which has made attractive low pricing practicable.

Cleanliness Is Next to—Impossible!

If you've already read the Ernst Haas story (pages 68-79), you'll remember that Ernst was once tossed out of a photo school for his indifference to neatness in

Werner Bischof

Ernst Haas: neat with a camera, but . . .

▶ landscapes...
▶ history...
▶ seascapes...
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For authentic pastoral scenes, travel through the picturesque rolling hills of Central New York. Then—to shoot spectacular mountain scenery without effort, *drive* right to the top of Whiteface Mountain in the Adirondacks. It's a photographer's paradise, from the crystal lakes at its base to the soaring 4,800-foot summit! And don't miss seeing forest-rimmed Lake George and famous Saratoga Spa in the foothills of the towering Adirondacks.

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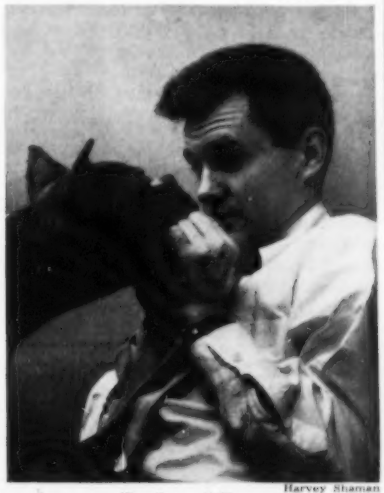
the darkroom. Here's a sidelight: Bob Schwalberg, who wrote our story, shared a darkroom with Ernst at one time. Bob, who is a pretty good darkroom housekeeper, had to nag Ernst regularly to get him to do even so much as rinse out a developer tray when he finished. He had begun to think his entreaties were bearing fruit, when one day he unlocked the darkroom door and found everything apparently covered with snow—floor, working surfaces, trays, sink, even the enlarger. He set to work with a sponge, and for three hours built up a string of imprecations to pour on Haas if he should come in. He didn't, and Bob finally called him—called him just about everything in the book. Ernst was incredulous at the other end of the phone. "But Schwalberg," he said, "I was so careful. When I finished, I took the sponge and I . . . Ohhh!" Then he realized he had mopped up every square inch of the darkroom with hypo!

The Comic and the Bow-Wow

Television star Orson Bean took time off from preparing a new comedy series for CBS-TV to act out a short script,



Harvey Shaman

Brady and Bean.

The Bachelor and the Baby (page 106), in front of the cameras of photographer Harvey Shaman. The baby, Jaye Smith, daughter of POPULAR PHOTOGRAPHY's Associate Editor Carol Smith, stole the attentions of Bean from his dog, Brady. The dog, a ham at heart, whined, broke away from his leash twice, but didn't succeed in getting into his master's act. Anyway, here they are—together at last.

Bischof's Japan: A Show

Last month we reviewed the late Werner Bischof's recently published *Japan*, and reproduced some of the outstanding pictures from this sensitive camera portrait of a land and its people. This month, residents and visitors in the Chicago area will have an opportunity to view more than 50 of Bischof's Japanese photographs, in color and black-and-white, at the Chicago Art Institute. The exhibit will run from March 10 through April 17.

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what you should know about CONTESTS

(Continued from page 54)

you feel shows your subject matter to best advantage, although it is generally wise to avoid the use of heavily textured papers or hand-colored prints. It is not necessary to make glossy prints. The contest sponsor, if the pictures are to be reproduced, will make suitable prints from the negatives. Double-weight paper stock is sturdier than single-weight, which tends to curl unattractively and is more easily damaged in handling. The rules generally state whether or not prints should be mounted. When they do not, the contestant should use his own judgment. There is no objection to prints mounted on standard 16x20 salon mounts, although these are somewhat unwieldy to pack safely. Many contestants send these in the large salon cases. Unmounted pictures will receive just as much attention from the judges as will mounted ones, but an excellent method, which will not only protect the print but also show it to best advantage, is flush mounting. This is accomplished by mounting a print with margins on drawing board or other stiff material. The margins are then trimmed off with a cutter or sharp knife flush to the edges of the picture area. The result is a stiff, reinforced print without margins.

7) Should pictures be taken especially for the contest? If the subject or locale is specified in the rules of the contest, yes, of course. Or if the contest is confined to a special theme, it is necessary to make your pictures to order. But if the contest is a general one, such as POPULAR PHOTOGRAPHY's, the best procedure is to submit the best work you have done. Shooting pictures especially for a contest usually leads to contrived, unconvincing pictures. Sincerity is important in any contest. And for this reason the best long-range rule is to develop your picture-taking eye and trigger finger by using your camera all year 'round, working sincerely to record what interests you as a person and in your own way. At the end of a year you should have a few good pictures worth submitting to contests. If you win a prize, that's so much gravy; if not, you'll be growing as a photographer and enjoying the satisfaction that goes with genuine achievement.

8) Picture stories are unwieldy and should not be submitted in contests in which single pictures are wanted. There are contests in which picture stories are welcome, but they are usually for professional photo-journalists. Two of these are the annual competition of the University of Missouri School of Journalism and that of the Encyclopedia Britannica which is held in conjunction with the National Press Photographers Association. An exception this year is the Photo Essay Contest sponsored jointly by *Life* magazine and the Photographic Society of America. This one is open only to amateurs.

The best way to learn good photo-essay technique is to study the picture magazines. Examine them carefully to see what makes them tick. Observe how the important points are made photographically, and how the captions contribute to the picture. What you see in the magazine, of course, is only a small part of what the photographer produced. His pictures were edited, the text and captions written by specialists, and laid out in the magazine for visual appeal, organization, and proper emphasis. In the *Life* contest the contributor will be expected to do his own text and caption writing as well as editing of the pictures. In this type of contest the judging will be done from the standpoint of photo-journalism. The big question in the minds of the judges (in this case, *Life* editors) will be: How well did the photographer tell his story or communicate his theme, and not: How beautiful are the pictures? The winner will have an appealing, moving, or fascinating story to tell and he will tell it with photographic clarity and impact.

Good photo-essays cover the subject in the round. They usually have what has come to be called a "key picture," which sets the stage, establishes the theme, and a concluding picture which, like the closing paragraph in a good word essay, sums it up or brings it to an effective close. In between is a series of pictures (close-ups, long, and medium shots) which, with the captions, are the elements and details that in the end add up to an effective total impression.

9) Your pictures should be packed for shipment with great care. If you don't protect them, they may arrive cracked or damaged in such a way as to ruin whatever chances they might have had. There are no rules for packing, but you can't go wrong by protecting prints between heavy cardboard or corrugated paper. This paper "sandwich" can be held together successfully either with elastic bands or by binding the edges with Scotch tape. Color slides can be mailed in the boxes in which they were returned from the processing laboratory. Larger transparencies may be submitted with or without mounts and protected in boxes or sandwiched between heavy cardboard. Identification can be fixed to mounts. Transparencies without mounts should be protected by transparent sleeves provided by the processing lab and identification can be provided on a gummed label affixed to the sleeve. Don't send glass-mounted slides. If the glass breaks in transit the transparency might be ruined. Use plastic, cardboard, or paper mounts. And don't staple entry blanks or captions to cardboard slide mounts. The staples scratch transparencies with which they come in contact—usually those of your own in the accompanying package. And when you are packing your pictures make sure that your entry blanks are properly and completely filled out and that your name and address also appear on the

Humor in subject matter can win you a prize as it did Mildred Totushek in the 1954 Graflex Photo Contest. See another winner below.

Grand prize in the 1954 National High School Photographic Awards went to Rosalie May for humorous shot of duck catching the nose of an overly curious youngster.

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1 The Contest is open to all persons, except employees of Popular PHOTOGRAPHY, Ziff-Davis Publishing Company, and their families. CONTEST OPENS MARCH 8 and CLOSES JULY 1, 1955.

2 **An entry fee of $1.00 must accompany each package** of pictures submitted. There is no limit on the number of pictures included in each package, or the number of packages submitted, but each package must contain its own entry fee. Entry fee may be paid by check or money order. Postage stamps not acceptable for entry fee.

3 There will be a Black-and-White Division and a Color Division; each will be judged separately. Any number of black-and-white prints, color prints, or color transparencies may be submitted by any entrant provided each package is accompanied by an entry fee of $1.00, in accordance with Rule 2, and in conformity with the following regulations: It is advisable to submit color prints and/or transparencies separately from black-and-white entries. There are no restrictions as to subject matter or size in either Division, although 5x7 or larger prints are preferred.

4 Prints may be either mounted or unmounted; this is optional with entrants. Be sure to print name and address on mounts of both black-and-white prints and color transparencies.

5 Pictures which have been published in, or accepted for publication or are under consideration by any photographic magazine other than Popular PHOTOGRAPHY or PHOTOGRAPHY ANNUAL are not eligible. Publication in any other medium does not make prints or color transparencies ineligible.

6 Each print or transparency must have secured to it a filled-in entry blank as provided here, or facsimile thereof. Please print or typewrite the information requested on the blank. Additional entry blanks are obtainable from photo dealers and finishers, or direct from the Contest Editor of Popular PHOTOGRAPHY if request is accompanied by a self-addressed and stamped envelope.

7 All prints and transparencies will be held for judging after July 1, 1955, and no entries will be returned until after announcement of the winners has been published in the December, 1955, issue of Popular PHOTOGRAPHY. Pictures which did not win prizes will then be returned as quickly as possible, provided that self-addressed and stamped envelope, or addressed label and postage were contained in the same package in which each lot of entries was sent. DO NOT SEND POSTAGE

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backs of prints or on the mounts of color transparencies. In the case of the POPULAR

familiarize myself with the rules that guided the contestants in this specific con-

SEPARATELY for return. The Contest Editor cannot enter into correspondence of any kind regarding entries.

8 Prize-winning pictures, including all reproduction and promotional rights, become the exclusive property of Popular PHOTOGRAPHY. All entrants who win prizes will be required to furnish original negatives before prizes are given, as well as model releases where necessary. All prize-winning negatives become the exclusive property of Popular PHOTOGRAPHY.

9 The contest will be judged by the editors of Popular PHOTOGRAPHY under the chairmanship of Mr. B. G. Davis, President, Ziff-Davis Publishing Co. Decision of the judges is final.

10 Address all entries to Contest Editor, Popular PHOTOGRAPHY, 366 Madison Avenue, New York 17, N. Y. Final entries must be postmarked not later than midnight of July 1, 1955. Prize winners will be announced in the December, 1955, issue of Popular PHOTOGRAPHY. While exercising the utmost care in handling entries, Popular PHOTOGRAPHY assumes no responsibility for loss of or damage to Contest entries nor for loss of entry fees.

11 Prizes will be United States Savings Bonds, Series E. Values of prizes listed are maturity values of the Bonds. Prize winners who are not United States citizens will receive, in lieu of Bonds, a check in the amount of the purchase price of the Bond award.

12 FOREIGN ENTRANTS: The foregoing rules apply to all entries, except that prints and transparencies submitted by persons residing in foreign countries are eligible for consideration only if accompanied by an amount sufficient to cover entry fee and return postage. This can be sent in the form of Postal Money Order, Bank Draft, or International Reply Coupons (in sufficient number). These Coupons are sold by most post offices throughout the Universal Postal Union and when properly rubber-stamped by the issuing post office each Coupon is exchangeable (as indicated in several languages on each Coupon) for a "postage stamp or postage stamps representing the amount of postage for an ordinary single-rate letter destined for a foreign country." Thus, each International Reply Coupon can be exchanged in the United States for postage in the amount that would be used for a single-rate letter (not air mail) to the country where the Coupon is purchased.

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Each one of your entries must be accompanied by a filled-in entry blank provided here, or a facsimile of it. Your photo dealer or your finisher has additional blanks on hand should you need them, or you can obtain entry blanks from the Contest Editor of Popular PHOTOGRAPHY. Your request for more blanks should be accompanied by a self-addressed stamped envelope.

●

**Values given are maturity values of the bonds. Each prize will be accompanied by a certificate of award suitable for framing. This certificate is printed on fine parchment stock and will bear the hand-lettered name of the winner.*

280 PRIZES*

BLACK & WHITE	COLOR	TOTAL
1st $2,000 U.S. Savings Bond, plus Trophy	1st $2,000 U.S. Savings Bond, plus Trophy	$4,000
2nd $1,000 U.S. Savings Bond, plus Trophy	2nd $1,000 U.S. Savings Bond, plus Trophy	$2,000
3rd $750 U.S. Savings Bond, plus Trophy	3rd $750 U.S. Savings Bond, plus Trophy	$1,500
4th $500 U.S. Savings Bond, plus Plaque	4th $500 U.S. Savings Bond, plus Plaque	$1,000
5th $250 U.S. Savings Bond, plus Plaque	5th $250 U.S. Savings Bond, plus Plaque	$500
50 Prizes, U.S. Savings Bonds, each $100	50 Prizes, U.S. Savings Bonds, each $100	$10,000
70 Prizes, U.S. Savings Bonds, each $50		$3,500
100 Prizes, U.S. Savings Bonds each $25		$2,500
	GRAND TOTAL	$25,000

In the event of a tie, duplicate prizes will be awarded.

FINAL CLOSING DATE: JULY 1, 1955

USE THIS ENTRY BLANK (PLEASE PRINT) 1955

Contest Editor, Popular PHOTOGRAPHY
366 Madison Avenue, New York 17, N. Y.

Please enter the enclosed picture in the Popular PHOTOGRAPHY Picture Contest for 1955. It is submitted in accordance with the rules, which I have read.

Name.....

Street.....

Town..... Zone..... State.....

Picture Title..... Have You a Model Release?.....

Where Made.....

Camera Used..... Lens.....

Exposure: Lens stop..... Shutter Speed.....

Film Used..... Filter.....

Lighting..... Paper.....

Published before?..... Where?.....

CAUTION: Be sure to include your entry fee of $1.00 in the package containing your entries (See Rules 2 and 3). If you want your pictures returned in the event you do not win a prize, be sure to include adequate return postage.

PRIZE WINNERS ANNOUNCED: DECEMBER, 1955, ISSUE

LOW-PRICED, HIGH-QUALITY "STRATO" VALUES!

New and Improved*

AERO EKTACHROME FILM
Now in 3 Popular Sizes

120 and 620 (40 ASA) — 35mm (20 Exp.) (100 ASA)

DAYLIGHT ONLY—A great film combining high speed and ultra-fine grain. Carefully processed for best possible results. Mounting included on 35mm film.

1.75 each
6 for 9.50
12 for 18.75

3 for 5.00

35mm x 25' Bulk—4.50 (No Process)
(Include 5c per roll for postage)

8mm - 16mm COLOR FILM
ASA 10 Daylight Only

8mm	16mm
25' - 1.98	100' - 5.50
3 for 5.75	3 for 15.95

Price includes processing & return

8mm B-&-W REVERSAL PAN

Fine Grain Panchromatic. This is not Government surplus. Film may also be used in 16mm cameras.

3.95

400' ROLL (No process.)
3 rolls—11.50

FOR ARGUS C-3 OWNERS
135mm 5¼" Telephoto Lens

F4.5 std. couples to R. F., focusing from 3½' to infinity; fully color corrected, click-stop diaphragm, built-in lens hood. Product of a leading lens manufacturer **49.95**

Introductory Offer: FREE of additional cost with purchase—Optical Finder with mounting bracket, and beautiful leatherette jewel box container for lens and finder.

35mm PLUS-X and SUPER-XX

Safety negative. Late 1953. Guaranteed.

	each	3 for
200'	3.25	9.45
400'	6.24	18.25
1000'	15.25	44.95

NEW! IMPROVED! ASA 12
35mm ANSCO COLOR

Finest Grain Daylight film for truest colors! We offer it at a low price that also includes quality processing. Fully guaranteed.

Each **1.75**

3 for 4.95 — 6 for 10.00 — 12 for 19.25

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AERIAL FILM Late 1953 Date!*

Latest date available. Comes in original factory sealed package. Choice of KODAK SUPER-XX or TRIPLE-S PAN . . . . . 3½" x 200' **18.75**

Quantity Prices Available.

35mm SINGLE LENS REFLEX CAMERA

F4.5 4-element et. Anastigmat lens in focusing mount with click-stop diaphragm interchangeable lens mount, prism R. F., built-in flash sync., eye-level magnifier and sportsfinder . . . **44.95**

Reg. $60. SPECIAL!

Genuine leather eveready carrying case (Reg. $12) $8.00

Send 25% deposit, pay balance on delivery

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Dept. 455 — Ridgefield, New Jersey

*U.S. Surplus—Guaranteed

backs of prints or on the mounts of color transparencies. In the case of the POPULAR PHOTOGRAPHY contest, Margaret Church, contest editor, warns you not to send negatives until they are requested. Finally, if you wish your pictures returned be sure to include sufficient postage and self-addressed label.

For additional intelligence here are the words of ten experts who are frequent judges of important contests. They are worth listening to:

JOE COSTA, chief photographer, King Features Syndicate—At the top of my list is the ability of a photograph to evoke an instantaneous response in the judge. A winning photograph needs an indefinable arresting quality that stops you as you go by and says "This is a picture!" Once it has accomplished its purpose and the judge has stopped to give it further study he looks for the other necessary qualifications.

Originality would rank high on the list. If the photograph is black and white it should have a good tonal range. If it was taken in color the rendition should be accurate. I am also interested in discovering if the photographer has closed in purposefully on his subject—or if he's included the entire outdoors in the picture content. In other words, has he framed his picture?

Another influence on my judgment of a contest is the set of rules laid down by the sponsors. If I'm told that a contest is being held solely to determine print quality, then print quality is going to be at the top of my mind as I scan each entry. Subject matter, however, can be as varied as fingerprints so far as I'm concerned; although I'm primarily a photographic journalist. I find that I react favorably to any subject that appeals to me emotionally. It's the emotional appeal that puts the flag up or down. But a picture must elicit this emotional response instantly as an entry seldom has a chance to grow on you later.

JACOB DESCHIN, camera editor, *New York Times*—I never really "judge" pictures; I only select what I like. Because I have no prejudices about subject matter, anything goes, just so the photographer does a job with it. I react first as a layman would, with no knowledge of techniques: Is it interesting? Is it important (and by this word I do not mean of world-shaking significance, but validity of statement, however simple)? Does it make me feel, understand, appreciate something, effectively show me something I have never seen before in just this particular way? If I find that I cannot respond to a picture in this way, then for me it is no picture, however perfect its technical attributes, however difficult it was to take and make.

Having been moved by the original total impact, I then examine the print further for qualities of a technical nature. If these lend strength, then all the better; if they weaken the effect, I still like it, but will place it, by comparison, lower in my estimate than the print that has as good an idea technically well expressed.

IRVING DESFOR, camera news columnist for AP News Features.—The first rule that I observe in judging a contest is to familiarize myself with the rules that guided the contestants in this specific contest. With these rules in mind I take a quick survey of a large percentage of the show in order to measure the total level of the entries. With this level established I then go on to eliminate the obviously mediocre or inferior pictures.

Once these are disposed of the serious selection can begin. Some photographs rate high in my estimation right from the start. These have a spontaneous eye appeal and strong visual impact. The greatest ingredient in a prize-winning photograph is worthwhile picture content. A successful picture should tell a story or inspire an emotion or reaction in the viewer without the necessity of reading a title or referring to a caption.

Once the choice has been narrowed down to the top awards, new and different factors occupy the attention of this judge. The photographer's sincerity, his initiative, ingenuity, and imagination become potent elements in evaluating the worth of a picture. It's important to discover whether or not he has successfully surmounted the challenge of difficult shooting conditions.

Technique and print quality take the final bows. All during the contest proper technique and good print quality are more or less taken for granted. But in the final judging, all other things being equal, these fundamental attributes of a good photograph may tip the balance by lowering or raising the rating of a picture.

ALAN FONTAINE, photographic illustrator—Vitality . . . excitement . . . strength! These are the qualities that catch my eye and capture my imagination in the brief moment allotted to each entry in a photography contest. While I was trained to appreciate pictorial values I now find myself more interested in pictures with "muscles." In judging color photographs a concentration of color in a postery effect has a better chance of being considered for a prize than a delicate variety of pastel shades. In fact the deliberate use of black and white in a color photograph with color used only as an accent is almost sure fire.

Above all I applaud effort. The old fashioned "A for effort" figures strongly in my scale of photographic virtues. Thought is a treasured commodity, perhaps because of its scarcity, and the photographer who can give evidence of disciplined imagination deserves consideration. I will look closely at a still life study, for instance, and often give it the nod over a lucky shot because the photographer took pains in setting it up.

Frankly, I'm pretty sick of the cute kid with the collie in front of a red barn. I'm also bored with the eternal yakking about the right angle. A photographer doesn't *find* the right angle or the suitable subject. The photographer who controls his medium *makes* the angle and *conceives* the subject.

NORRIS HARKNESS, president, Photographic Society of America—Different judges look for—and ignore—different elements in pictures. Some are so eager to see the photographer's real or fancied motivation that they ignore photographic quality. Others are so carried away by

technical perfection that they seem to care nothing about what the picture may convey.

To my mind it is criminally stupid to forget that we are using a fine technical process—and dumb to worship it blindly.

A top-flight picture must first be a good photograph. Then it must have something to say. It may express almost anything from sheer beauty to stark horror, but it must make you feel its meaning.

It follows, then, that a judge should throw out all examples of poor technique and all the meaningless, empty photographs. Then he chooses as "tops" those which best combine the expression of the reason for presenting the picture with a technique which fits the thought.

LEJAREN A. HILLER, illustrator—I'm an illustrator, I've always been an illustrator and painter; therefore I find it impossible to ignore composition and overlook subject matter in judging photographs. I expect, even demand, a well-composed picture with a proper interpretation of the meaning of the subject.

If you want to use a photograph to tell a story you should suggest the theme strongly enough so the viewer can see what it's all about. A picture should relate to the total environment as well. And even this frame of reference doesn't excuse the photographer from an esthetic consideration of the space he's working in and the harmony of the colors in his photograph. While the color needn't be spectacular, it must be chosen deliberately to create or enhance the mood of the picture.

It's taken for granted that a photographer is capable of using his medium in any way necessary to achieve the effect he is seeking. This prerequisite knowledge is one of the primary elements that I look for when I judge a picture. The photographer who can produce an effect on the viewer at will deserves to win. The effect need not be literal although a photographer should be as honest as the average bricklayer. You can't steal the credit for something that takes place by accident before your camera. The camera deserves the kudos for such happenings. It's not enough just to be present with a camera in your hand. You should know how to present what takes place before the camera both subjectively and objectively with due regard for the medium you're working in and the audience you intend to reach.

VICTOR KEPPLER, photographic illustrator—It's hard to close in on a definition of "What I look for in a picture." But I can tell you quickly the types I dislike most.

I dislike copies of any kind! Just one more picture of the scenic beauty taken from the top of the Mark in San Francisco or New York's skyline seen from Central Park, will get the lowest rating my score card affords. As for sea gulls over a dock, I'd give them back to the refuse they were seeking when the photographer spotted them. Then there's the careful setup of a single pink and a single white water lily, a dilly in its time but this isn't 1925. The ubiquitous bums on the Bowery, or reasonable facsimiles thereof, photographed in doorways or alleys all over the world, are another "non-prize winner" on my list. Included in this unfavored category are old men with beards.

Obviously posed pictures of children doing things that children never do spontaneously make me as uncomfortable as the children; while gag shots of children hoked up with dunce caps, Daddy's spectacles, or Grandma's shawl are guaranteed not to influence this judge or win a prize. Without a single tear I can forego any more pictures of the U. N. with or without reflections.

If this seems to leave little for me to like in photographic contests let me reassure you. Even some of these chestnuts can be refurbished into prize winners if the photographer will clothe them with creative thinking.

ARTHUR ROTHSTEIN, technical director, *Look* magazine—Photo judges, like baseball umpires, are necessary, work hard, know the score, maintain standards of performance, and their efforts are often unappreciated.

Judging photographs is to some extent subjective. The background, prejudices, and experience of a judge often determine his attitude toward a photograph. For this reason, judges should be carefully selected for the type of photograph they are to consider. One should not expect an admirer of the realistic approach to find favor with a pictorialist's efforts. A wise contestant, also, will have a clue as to the type of work that might win by analyzing previous decisions of the judges.

Aside from the emotional factors involved, there are certain physical standards of performance which a competent critic can evaluate in a photograph. Unless there is a good reason, every photograph should be sharp, well exposed, properly printed, exhibit good composition and require a minimum of explanation. In addition to these qualities, the judge looks for evidence of originality, sensitivity to environment, presentation of an idea, a mood, or unusual technique.

It should be remembered that a judge of a group of photographs can only pick the best of those submitted. Sometimes the best is not good by any standards. This is a frustrating experience—to be required to award a prize or honor to a photograph that is inferior and wins only by default.

The judge of a photo contest has great responsibilities. Those who submit photos expect him to be fair, honest, discerning, and qualified to choose the best. Those who sponsor the contest expect him to make decisions which will meet with the approval of the contestants. In return, the judge asks only that his decisions be understood in terms of the work submitted and that he receive some appreciation for his knowledge, concentration, and effort.

SY SPECTOR, camera editor, N. Y. *Journal American*—To arrest my attention initially there must be rapport between the picture that I'm judging and my own experience. This is the ultimate test that any picture must meet in any contest. Unless a picture dovetails with

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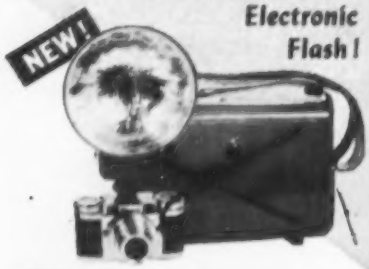

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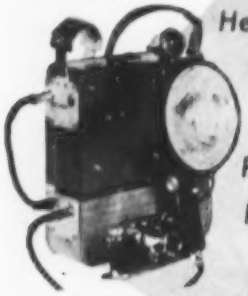

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ONLY $194.50 (incl. battery)

Booster $79.50

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Operates on all A.C. voltages, or with its battery. And it has its own built-in charger, and switch to operate on 100 125, 225, and 450 w/s. Accessory photo cell ($24.95) converts unit to slave distances over 50 feet. No matter what you spend for electronic flash, there is no finer unit made! This is the ultimate achievement in professional design...for portable or studio use!

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some experience of my own it won't register at all. If it strikes a note in an interesting, an emotional, or a pleasant way the picture will merit and receive further attention from me.

So far as subject matter goes there is no restriction except for corny situations and conventional delivery. A subject that may have been fresh a scant year ago loses its impact when it's repeated or imitated. Even the cliché of a dog and a boy had a basic emotional appeal that has lost its meaning only because it has been overworked. But if a new approach were found to the same hackneyed boy-dog combination it would probably register as high as it formerly did.

Contestants should keep in mind that change is the only constant element in photography and consequently in contests and judges of contests. If the great artists of the Renaissance were today delivering the work that made them famous they would be considered merely fine draftsmen. Their innovations have become part of our culture and are no longer either unique or novel.

Today's trend toward available light is encouraging. With available light the photographer is photographing just what he sees. When he was tied to the flash-on-camera technique he photographed a different picture from the one he saw because it was changed by his photographic lighting. However, available light doesn't immunize the photographer against the demand for excellent picture quality. A photographer should always get the clearest, sharpest picture of a subject that it is possible to obtain.

WILLIAM J. SUMITS, chief of *Life* photo lab—I enter upon judging a photographic contest with a mind as free from prejudice as I can make it. But my personal and professional experience has shaped my taste in pictures and developed both preferences and dislikes.

Naturally I feel better qualified to judge picture stories than single photographs. Yet I enjoy looking at single pictures when they meet the standards imposed by photographic journalism. I dislike them intensely when they are doctored up to appeal to judges of salon photography. Salon-type pictures tend to go right out of this world and they seldom take me along with them. I suppose I'm actually a purist because I hate altering of any kind in photography. If a picture has been prettied up I'm more apt to give it the boot than the nod.

For the most part I think a good picture sells itself to a judge instead of the judge deliberately searching for a picture that fits into his philosophy of photography. However if a contest has a commercial aspect I respect it and keep an eye out for entries that will benefit the sponsors.

An aspect that I can't avoid if I try is the tendency of contest photography to run in cycles. Several years ago when a picture of a skinny cat sniffing at a garbage can won a prize, it was an original concept. At the next contest and the next and the next numerous pictures showed up on the same theme. These popular trends include the use of bouncelight, the fashion model with the taxi and violent movement in the background, and high-key photography. They all run the normal gamut and then a new trend starts. But contestants might remember that the award goes to the innovator, not the imitator.—

contests and markets

CONTESTS

LIFE MAGAZINE, along with the **PHOTOGRAPHIC SOCIETY OF AMERICA,** has announced a $10,000 essay contest for amateur photographers. Prizes of $5,000, $2,500, and $1,000 will be awarded to winning entries which may be black-and-white prints or color transparencies and must be accompanied by captions and text in the style of *Life*. Photo essays will be judged as material regularly submitted to *Life*, and if winning entries are published, *Life* will pay usual page rates, as well as prize money. A booklet "How to Win the *Life* Contest" which has been made available by the PSA to those interested in the contest, is available from the PSA office, 30 East 60th Street, New York, N. Y. Entries themselves must be mailed before July 31, 1955, to Box 795, New York 46, N. Y.

THE 17TH ANNUAL NEWSPAPER NATIONAL SNAPSHOT AWARDS, which opens this year on May 29, will again be sponsored by more than 90 newspapers throughout the country. Approximately $17,500 in prizes will be distributed among weekly winners in the local contests and among the top prize winners in the national contest. Individual snapshots or prints up to 11x14 may be submitted each week of the contest to the sponsoring newspaper in your area in as many of the following classes you wish: A—Babies and Children; B—Activities, Teen-agers and/or Adults; C—Scenes and "Still Life"; D—Animals and Pets. Every week until the end of the contest, September 10, a $5 award will be made in each of the four classes, and after the last week of the contest, regional winners will compete against each other to determine which single photo from each group will enter the National Contest. The newspapers will make $25 awards to the top winner in each class. Prints of uniform size will be sent to the National Awards, where the top prize winners will be chosen. The three top prizes in each group will be $1,000, $500, and $150, respectively, along with 68 additional awards of $50 each. For the name of the nearest participating newspaper in your area of the United States or Canada, write National Newspaper Snapshot Awards, 343 State Street, Rochester 4, New York.

THE NEW HAVEN RAILROAD photographic contest for the winter season will feature human-interest pictures of fun in the New England states as well as scenic shots of that area. Duplicate prizes will be awarded in the two classes of entry: black-and-white and color. In each class of entry the two top prizes will be $500 and $200 with two $50 awards for third and fourth prizes and 20 additional prizes of $10 each. Contest rules are available by writing the New Haven Photo Contest, Room 3634, Grand Central Terminal, New York 17, New York, or from any New Haven ticket office. Entries must be sent to the New York Central address by the contest deadline, April 15, 1955.

BOYS' LIFE magazine will open its 1955 photography contest May 1 to boys and girls who will not have passed their 19th birthday by September 15, 1955. Over $2,000 worth of photo-equipment prizes will be awarded among the seven following groups of entry: Color Slides; Camping and Hiking; Action in Sports; People; Animals; Landscapes and Buildings; Trick and Gag photos. Photographs will be judged within each class of entry but duplicate prints may be entered in any class under which

it can qualify. No more than one prize may be won by a contestant in each category. Black-and-white photographs must be no larger than 8x10" and all entries must be accompanied by the following information: Name, address and age; type and make of camera, film, flashbulbs, and filter used; when and where picture was taken and title of picture. Model releases must be available on request for any recognizable people in the pictures. Photographs and transparencies will be returned only if covered by return envelope and postage. Submissions to the contest and requests for further information should be sent to Boys' Life Photo Contest, 2 Park Avenue, New York 18, N. Y.

SCHOLASTIC-ANSCO Photography Awards have been announced for high school students from 7th-12th grades in any school in the United States and its possessions. There will be three basic classes of entry: 7th-9th grades, 10th-12th grades, judged separately on black-and-white, and color, with all entries being judged together. Size of black-and-white prints must be at least 8 x 10, mounted on a 16 x 20 board, with a contest entry blank affixed to the back of each print. Color must be submitted separately. Photographs will be sent to the national competition from regional judgings. Only in cases where regions are not covered by a local judging may entries be sent directly to Scholastic Awards, Box 7376, Oakland P. O., Pittsburgh, Pa. There will be 42 national cash awards, 14 each worth $50, $25, and $15 respectively. Ansco will automatically double any of the awards if photographs were taken with Ansco film and Sylvania Electric Products Inc. will double any of the basic awards for pictures made with Sylvania flashbulbs. Among general entries, Sylvania will award 3 cases of flashbulbs to the student showing most promise in flash photography. Art Center School, Los Angeles, Calif. is offering a one-year scholarship to the senior whose 8-20 print portfolio shows most promise. Entry blanks including list of regional judgings and exhibitions may be obtained from Scholastic-Ansco Photography Awards, 33 West 42nd St., New York 36, N. Y. Contest deadline is March 15, 1955.—

New Rangefinder System

(*Continued from page* 24)

(there is one for each lens) slip easily into the optical finder.

Other features of the 1955 camera include: a built-in Rangelite for focusing under low-intensity lighting conditions, a Rangescope which magnifies rangefinder images (and also serves as a focusing aid for people with glasses), and a flexible-wire sports finder.

The Rangelite operates on the following principle. A beam of light is projected from each of the rangefinder windows. As the photographer starts moving the bed of the camera, the lights move. When the two lights coincide, the camera is in focus. The Rangelite has a self-contained power source.

For the photographer with glasses, the Rangescope is definitely an aid. It not only magnifies images (1½ power) in the rangefinder but also extends out over the back of the camera so that the lens of a pair of glasses can be placed right next to it.

The flexible-wire sports finder is designed to save wear and tear on the front standard. It is made of spring-like steel that will take a lot of pushing and bending without throwing the front standard out of adjustment.

Graflex has also tried to prevent loss of the small cams that adapt lenses to the rangefinder, or their confusion with other cams. On each lens board is a spring holder under which cams are stored when not in use.—

2 Inches to Infinity with ONE lens

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Model D — 2 inches to infinity..... $114.95
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This is the greatest focusing range ever achieved in any lens. With a Makro-Kilar you can shoot distant scenes, normal views — and then by simply moving in close, can seek out a minute detail, 2 or 4 inches away. There are no extension tubes, close-up lenses or focusing bellows required. You simply mount the lens to your camera: Exakta, Pentacon, Exa, Contax S, Rectaflex or Alpa, and shoot.

The Makro-Kilar lenses are deeply recessed, and require no lens hoods. The focusing rings are clearly engraved with distance markings, exposure factors and magnification scales.

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For beauty that improves with age, there's nothing like the lasting loveliness of fine wood. Especially when it's been masterfully crafted by Nega-File. A typical example from our full line of superbly finished photographic files is the brand new SM-25. Holding 25 slide magazines, it's made of selected hardwood and offers complete protection against dust, humidity and sudden temperature change. Partitions keep magazines in an upright position for easy identification. The SM-25 file can be used as a single unit or as a chest of drawers. Heavy, brass-plated box corners fasten units together when stacked. SM-25 Magazine Slide File $19.95, BA-SM-25 Base $4.95. If your dealer cannot supply you, order direct. Ask for catalog and filing handbook.

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Make Your Own Slide Titles

(Continued from page 66)

the fact that the painting should be done on a sheet of 16x24-in. glass. When used on paper, the dyes which provide color soak in to a certain extent, lowering the contrast between the letters and the background. Although no such problem exists when glass is used, remember to back up the glass with a sheet of white paper when the slide is exposed.

Try for various background effects, which are unlimited. Keep the palm of your hand perfectly flat and make horizontal strokes to form the color over the entire sheet of glass. Then with the thumb or a finger, whichever is easier, letter the title you want. Another method is to hold the fingers slightly apart and with the fingertips make a zigzag pattern across your glass. Use two or more colors for special effects—heavy applications of color will give the desired separation.

Don't overlook its use for movie or stereo titles—the applications are limited only by your imagination. Use finger paints on paper for the spontaneous production of background colors for floral arrangements and for photographing postal cards, road maps, etc.

CUTOUTS

Cutouts allow professional results from even the most inexperienced. A few pieces of colored construction paper and scissors are all that is required. Just cut your idea out of material at hand. If you need to use difficult figures and forms, have the children trace them from magazines and newspapers. They can trace and cut out a roaring lion, or circus tents. Before shooting a cutout as a slide, add the title with plastic letters.

NATURAL TITLES

Many vacation titles can be photographed on the spot. Keep a sharp lookout for signs and markers which will identify the location. Such titles can be made even more interesting by including a member of the family in the shot, but remember to move in close so that you'll be able to read the sign when the slide is projected or shown. Avoid extraneous matter and, if extremely close, correct for parallax by making sure the camera lens is pointing directly at the center of the sign.

If there should be a complete lack of identifying markers, then scratch a title in sand or soil, or spell out the location with twigs, stones, etc. If you prefer, bring home uncopyrighted postal cards, folders, maps, or souvenirs to photograph on the focal frame, keeping the story continuity.

It is hoped that these ideas for titling slides will prove sufficiently practical and interesting to cause everyone to realize the importance of properly punctuating them with appropriate titles to hold interest and continuity.

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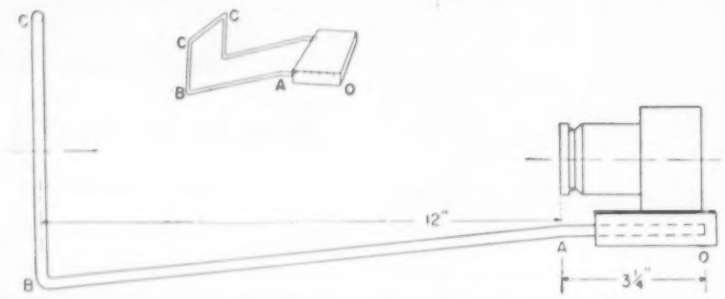
measured from the front of the supplementary lens mount



THE FOCAL FRAME

Here's how to solve the distance, focusing, and view-finding problems of close-up title-slide photography. You'll need a supplementary close-up lens and a unique gadget known as a focal frame. This is merely a metal frame which is attached to the base of a movie or miniature camera and extends out to the area to be photographed. It also accurately locates the plane of sharpest focus. An adjustable frame called the Cal-Cam Focus Guide, is sold by some camera stores and by the manufacturer; Cal-Cam, 1564 N. Grand Oaks Ave., Pasadena 7, Cal. Such a frame would be difficult to make in the home workshop since it would have to adjust three ways: distance, height, and width. But if you are at all handy with basic tools you can build a focal frame with a

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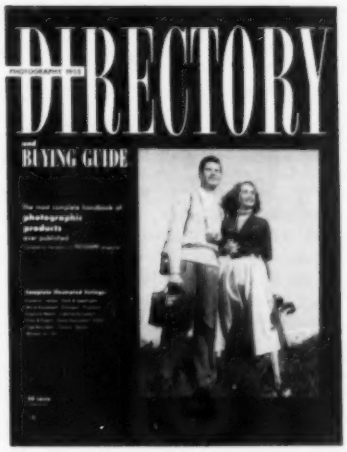

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The dimensions here apply to most miniature cameras. With other cameras, take a picture of two crossed yardsticks at the correct distance for whatever supplementary lens is used. The picture will show the frame size needed. Whether you use these dimensions or the results of the yardstick test, the field sizes apply to the plane of sharpest focus. To be most practical a focal frame should be located on the near side of this plane. So, although the frame's inside dimensions equal the frame size when the camera is focused at infinity, you can make the adjustment by having the frame about 10 percent closer to the camera than the normal camera-subject distance for infinity. If you use the dimensions in these tables, this adjustment already will have been made for you.

When copying flat materials and titles, obtain sharpest focus close to the frame by setting the camera's focusing scale at 15 feet. For close-ups of flowers and other three-dimensional objects, the frame is best used when the focusing scale has been set at infinity. Surround the near plane of your subject with the frame, keeping in mind that there is very little depth of field at such close range.—

Roll Film Developing: time and temperature

(*Continued from page* 80)

be. If there is relatively little silver formed on the film it is a *thin* negative.

Contrast is the difference between the lightest and darkest areas in the negative. When this difference is great the negative is *contrasty*—when the difference is slight we call the negative *flat*.

Density is mainly the result of exposure. However, density does increase with prolonged development, even though slowly. Contrast is mainly the result of development. The longer the film is developed the more contrasty it will be—up to the limits of the film. Slow films are usually more contrasty than the fast films, which are of low contrast. This is the reason why a fast film generally requires a longer developing time in order to build up contrast.

At Brooks Institute of Photography the developing requirements are very strict. The students are trained for a professional career in photography, and must bring to class good photographs on every assignment for criticism and analysis, just as the professional photographer must deliver good photographs to his customers. But here the instructor plays the role of the customer: he "buys" the pictures, and they must be good and salable before they are accepted by him for a satisfactory grade.

However, from observations of hundreds of students, it is an established fact that even though the identical materials are used in a given assignment, variations of up to 50 percent in the developing times by different individuals exist in order to obtain a negative of exactly the same characteristics.

The explanation for this phenomenon lies in the difference in refraction of different lenses, differences in the individual temperaments, the speed of manipulations during the agitation, the so-called "personal touch," and slight differences in films from one batch of emulsion to another.

Even amateurs, coming to Brooks for short courses, must work out their personal developing method before they can do serious and consistent work.

The developing times recommended by most manufacturers generally have a considerable safety margin against underexposure, the light meters are usually calibrated to give a one-stop-plus safety margin, and in case of doubt we have the tendency to give a generous exposure.

In addition, the makers of films are concerned with the 40 million amateurs, the great majority of whom take their films to the corner drug store. It is for the amateur that the manufacturer has furnished commercial photofinishers with data for obtaining "average" results by producing heavy, contrasty negatives suitable for contact printing or "De-Luxe" jumbo-size enlargements. You are now out of this class and should not be satisfied with average results any longer. This is why you must *revise* the developing times given. For a good enlargement you must make a negative not too contrasty and not too dense. (There will be some difference in the contrast desired depending on the type of the enlarger used. For a condenser enlarger a less contrasty negative is best, a little more contrast is desirable for diffusion-type equipment, and still more contrast is required for cold-light enlarging.

Since the ideal condition is to do almost all your work on one grade of paper, you should work for a negative that will print perfectly on a #2 paper. But in spite of high skill you may produce a near miss, in which case it should still be possible to make a good print on a #3 paper if the negative is flat, and on #1 paper if the negative is too contrasty.

In order to know how to adjust the film manufacturer's recommendations for developing times, we can conduct a little experiment to find the best developing times for our negatives. Let's use a Kodak Super-XX roll film of the 120 size and develop it in Microdol developer. The recommended developing time is 16 minutes at 68 F. This is for the famous "average" scenes. Now let's also agree on what we will consider as our average scene in order to establish a reference point. Our average will be a scene with a reflectance range of 1 to 6, i.e., the *lightest* part of our subject will reflect 6 times more light than the darkest part. The difference in reflectance can be measured with a light meter. Make sure that you are measuring parts of the sub-

ject which will be in your future picture and consider as the darkest part the one where you want to keep details in the print.

Make several exposures of a scene with a 1 to 6 range. Start by giving the exposure you figured out as the right one, then open up one stop for the next exposure, two stops for the following, then close down, successively one stop and two stops for two more exposures. Keeping notes on the light-meter readings as well as on the exposures is essential.

Should you not have a light meter, use the recommended exposure on the data sheet packed with the film.

To get back to our example, the recommended developing time for Super-XX film in Microdol is 16 minutes—reduce it by 25 percent to 12 minutes. If after developing the first roll of film you find that prints from these negatives on a #2 paper are rather grayish, flat, and actually require a #3 paper to get a perfect print, the negatives are flat and need more contrast. This can be obtained by longer development—therefore, develop the next roll, taken as the previous one of the same or a similar scene (1 to 6), approximately 20 percent longer. In our example, that will mean 14 minutes. If you can make a good print of this new negative on a #2 paper you have found the right developing time *for this kind of scene*.

When you take pictures in the shade or on an overcast or rainy day, the reflectance range of the scene you are shooting will be lower. The true rendering of the subject matter will result in a gray print, but in such a case building up contrast by developing longer makes a more pleasing print. Additions of approximately 20 percent to the previous developing times are suggested. In our example, 2 minutes will be added to the 12 minutes we started with (provided we found this to be satisfactory) and we will develop the film in Microdol for 14 minutes for 1 to 4, and 16 minutes for a 1 to 2 range. With very flat lighting (a 1 to 1 ratio) you may have to "expand" the negative by prolonging development up to 18 or even 20 minutes, and underexposing slightly.

If you encounter higher contrast than 1 to 6, like shooting against the light or taking a white building with an open door in which you desire to hold details in the print, you will have to "compress" the negative by overexposing and underdeveloping it. In such a case, expose for the shadows—and here is a rule of thumb that works. If your overexposure is by one stop, underdevelop by 25 percent; if you overexpose by two stops, cut 50 percent off the developing time you found to be normal.

The few hours it takes to run the tests will be well spent indeed. The experience you gain will improve your ability to judge a negative, and will give you a better understanding of the possibilities as well as limitations of photography.

Should you have on the same roll different exposures requiring different developing times, you must either develop for the most important and take a chance on the rest—or develop by inspection:

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see the story on this procedure elsewhere in this issue.

Now let us have a look at a step-by-step description of time-and-temperature development of roll films.

Not much equipment is needed for processing. A developing tank—one of three basic types: the stainless-steel Nikor type which loads from the center of the reel out; the plastic type in which the film is pushed on to a grooved reel from the outside; or the apron type which has no reel, the film being rolled up with a serrated plastic strip which allows the developer to circulate around the film. You also need an exact, reliable thermometer; a funnel (plastic or glass) and a graduate, even one of the kitchen variety; a few brown bottles for developer and hypo; a plastic apron, and a towel. A good timer will complete your equipment. These items can easily be kept clean at all times if you make it a habit to wash everything right after use.

In some parts of the country, tap water may be slightly alkaline, or contain mineral elements which may change your developer. In such cases, distilled water is recommended for mixing developers. This is especially important for finegrain developers.

Regardless of the type of your equipment, remember that you will have to load the developing tank in a darkroom, closet, or a changing bag; this is why some practice with a "dummy" film is very useful. You should be able to manipulate the film without looking at your hands.

In total darkness, unroll the film and tear off the one end attached to the paper. Using the "push-on" type of reel, you can take a few precautions which will prevent your film from getting stuck. The very end of the film can be bent back against the natural curl, or the corners can be clipped off with scissors. The grooves of the reel must be dry—a toothpick with a piece of dry cotton can be used when necessary to dry them in a hurry. A slight lubrication of the grooves with a piece of paraffin or wax will make the film glide better for several months.

After putting the loaded reel into the tank and closing the cover, you may now turn on the normal room lighting. The developer is poured into a graduate to measure the right amount of developer to cover the film. Measure the temperature with a thermometer (the best processing temperature lies within 65-70 F). Start the timer immediately. The filling of the tank should be done rapidly, but can be rehearsed beforehand a few times with plain water in order to learn to avoid air bubbles. As soon as the tank is filled it must be agitated for 30 seconds; agitation is repeated once every minute thereafter for five seconds.

Since agitation removes waste by-products of development from the film and brings the emulsion into contact with fresh quantities of developer, the developing process will be accelerated the more the film is agitated. Constant agitation may cut the necessary developing time by as much as 20 percent. The stronger the developer and the shorter the developing time required, the more active should be the agitation. When the development is limited to some 3 or 4 minutes, constant agitation is advisable.

The importance of agitation cannot be overstated since the rate of development must be known in order to control the contrast. Give the tank a brisk twisting of about 180° (half a circle) and then turn it upside down and back. In order to agitate with the same pace every time the agitation should be regulated with a timer.

In tanks where the agitation is carried out with a spindle, revolve the reel clockwise and counter-clockwise. All agitation must be gentle to prevent foam from forming on the surface of the developer.

While development is progressing, run the tap water until it stays at the same temperature as the developer, using both hot and cold water if necessary. Place the tank and the bottle of hypo into a tray of the water. This will keep all the solutions at the same correct temperature.

When the development is finished, the developer is poured out and the tank is filled with water, agitated, emptied, and filled with fresh hypo. Agitate constantly in the hypo for the first 3 minutes; agitate intermittently for the next 7 minutes. When this 10 minutes is up, the film is ready for the final wash.

For washing roll films on the reel there is hardly anything better than an empty one-pound coffee can with a few holes punched with a nail around its circumference, near the bottom. (A two-pound can will hold two reels.) This contraption is placed under running water so that the water runs out the bottom holes and slightly over the top. The water stream should not strike the film directly. Twenty minutes of washing is ample with this method. Watch the water temperature—it should be adjusted beforehand to the same temperature as the processing solutions.

After the final wash the film is swabbed with a tuft of surgical cotton on both sides, under running water. Then seesaw it several times in a wetting solution, allow to drain, and hang it on a string with a clip. With two soft viscose sponges (you may cut one sponge in two) dipped in the wetting solution and squeezed dry, gently remove the excess moisture by running the two sponges down the film, one on each side. Fasten another clip on the bottom and hang the film up to dry in a dustless, warm place (not more than 95 F). The film should be dry in about three hours, depending on the humidity of the air. Protect the sponges from dirt by keeping them in a covered container.

If you are able to convert a room in your house into a genuinely light-tight darkroom, you might want to process your films in trays instead of a tank. With this method, arrange three 8x10 trays on a table, with the developing tray at your left, the rinse water in the middle, and hypo at right. In total darkness tear the film from its paper backing and attach a clip to the outside end. Holding onto the clip, pull the roll out to its full length and immerse the free end in the developer. Guiding this end with your thumb and forefinger, lower the clipped end into the tray so that the film rolls up

by itself. Hold the roll by the edges and pull the clipped end out again, quickly but steadily. You must repeat this procedure continuously. The constant agitation requires you to cut the development time for tank processing by 20 percent. The data sheets supplied with films and developers generally list separate developing times for constant (tray) and intermittent (tank) agitation. When developing time is completed, drain the film and repeat the "roll-up, pull-out" procedure in the rinse water and then in the hypo. Washing can be done in an ordinary sink with overflow drain, or by changing the water in a tray twelve times in an hour.

The developer loses part of its strength after a film is developed in it. When we develop a second film in the same solution the developing time should be increased by a few minutes, still more for the third, and so forth. This is a bit complicated, and may increase the grain size through prolonged development. There will be less and less developer left in the tank because some of it was carried away on the surface of the film. To keep the developer at the same level and of the same strength, the manufacturers of films recommend the use of *replenishers*. However, we at Brooks Institute recommend a system that has been proven to give consistent results. When you finish developing the first film, pour the developer into an empty bottle labeled "Old Developer." For the second and all succeeding films, take two-thirds "New (unused) Developer" and one-third "Old Developer" to fill your tank or tray. The "Old Developer" will last for some time, but it will, of course, eventually lose its strength—don't use it when it turns yellowish-brown or otherwise discolored.

Now that you are on your way to better pictures, it is only natural to start thinking about *grain size*. The slower speed films have an inherent finer grain, the faster films a coarser grain. Although grain in any film is so small that it takes a strong magnification to see it, what you see in a print with a mottled effect are clumps of grain which can be avoided by careful developing methods and the choice of a "fine-grain" developer. Overexposure *and* overdevelopment will not only increase grain but may also destroy sharpness of the negative.

With No. 120 films the question of grain is not as critical as many amateurs think it is. All the processing has to be done carefully, but using 2¼x2¼-in. negatives for enlargements of 16x20-in., Kodak Super-XX film developed in Microdol or a similar developer will meet the most exacting requirements. However, for 35-mm the slower films of finer grain like Plus-X, and one of the genuine fine-grain developers should be given preference.

Another factor which may affect the fine grain of a film is a difference in temperature between any of the solutions exceeding about five degrees Fahrenheit.

We think the days of "by-guess-and-by-God" methods of developing film are over—they certainly deserve to be, because with this time-and-temperature method you *know* what you're getting. And it's going to be good.—

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RAY-VOGUE

what's new — Trade Notes and News

All data and descriptions ascribed to products listed herein are those claimed by the manufacturers and distributors, and listings are not to be construed as endorsements by POPULAR PHOTOGRAPHY. For further information write to address given in trade note.

CAMERAS & ACCESSORIES

ALPA XENON, a Schneider 50-mm f/1.9 camera, is imported by Karl Heitz, Inc., 150 W. 54th St., New York 19. Its automatic mechanism allows groundglass focusing at full aperture, for pictures taken at any stop from f/1.9 to f/16. Vibrationless mirror flip-up is utilized to close the diaphragm to the preselected stop and release the shutter, the mirror then returning to viewing position as the diaphragm reopens to full aperture. Prices start at $219 for the straight reflex; the prism reflex type with automatic Xenon is $398, and the same plus rangefinder is $429.

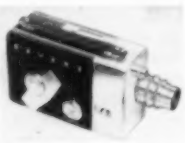
FX 55 CAMERA is an improved model of the FX High Precision Single-Lens Reflex; is imported by Kine Camera Co., 11 W. 20th St., New York. It has a single flash connection said to be perfectly synchronized for both electronic and standard flashguns. Included in features are focal-plane shutter with ½ to 1/500 speeds, eye-level prism finder, coupled film advance and shutter cocking, and a preset diaphragm control. Price, with f/2.8 Will-Wetzlar lens, is $99.50; with f/2 Zeiss it's $220.

KODAK RETINA IIIc 35-mm Camera, with a built-in exposure meter, interchangeable lens components, and rangefinder, has been added to Eastman Kodak Co.'s line of precision cameras. The rear element of its f/2 lens is fixed while the front element may be replaced by either of two six-element components to form a wide-angle or semi-telephoto objective. Other features are thumb-action film-advance lever and a film-channeling plate which holds the film flat with minimum pressure. The double-exposure-prevention control may be released to permit intentional double exposures. Price of the new Retina with standard 50-mm lens is $185; 80-mm component costs $82.50 and 35-mm $62.50.

SPY CAMERA is smaller than a matchbox and weighs ¾ oz. It features an f/4.5 lens; 1/30 sec shutter; optical viewfinder; and an exposure counter. American Homecraft Co., 3714 Milwaukee Ave., Chicago 14, Ill., guarantees it to take sharp, crystal-clear pictures. The price, including three rolls of film is $3.98; three rolls of eight exposures each are 87 cents.

NIKON S-2 is announced by Nikon Incorporated, 277 Fifth Ave., New York 16. An improved viewfinder shows a life-size image, facilitating hair-line focusing by means of the long-base coincident range-finder. New features are rapid film transport and "Hi-Speed" rewind, the latter operating by means of a lever crank foldable into the rewind knob. Synch settings are effected through rotation of a calibrated dial. A description of the many other features of the 35-mm Nikon S-2 may be had by writing the company, or through your dealer. Price of the camera is $299.50 with standard 50-mm Nikkor f/2 lens; with f/1.4 it is $345.

TOWER 25 REFLEX CAMERA, announced by Sears, Roebuck and Co., has the Nikkor f/3.2 lens and click stops to f/22. Features include rapid film advance crank synched shutter for "X" speedlight and standard flash, and speeds from 1 sec to 1/500, plus Bulb. The number of exposures made is shown in a window and a focusing hood pops into position with sportsfinder and shielded magnifier. A depth-of-field chart is on the focusing knob and a positive-locking camera back has the tripod socket in its center. Price is $119.50.

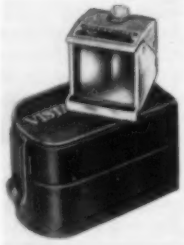


REVERE "36" 16-mm Revere movie camera is being introduced by Revere Camera Co., Chicago 16. It has a 1-in. f/2.5 Normal Cine Raptar lens; simplified magazine loading; a new objective finder; ratchet winding key for fast operation; long-run spring motor. There's a simplified exposure dial and provision for single-frame exposure; there are five speeds. Price with the f/2.5 lens is $139.50; with other faster lenses the cost is higher.

BODY CAPS in bayonet or screw mounts for Leica, Kine Exakta, Praktica, and Contax S cameras are available from Spiratone, Inc., 49 W. 27th St., New York 1, N. Y. Price is $1 each.

PRICE REDUCTIONS are announced on items of the Nikon line. The Nikon 50-mm f/1.4 is now $299.95 and the 85-mm f/1.4 is $299.50. Nikkor lenses are approximately $10 less apiece. Further information available from Nikon, Inc., 277 Fifth Ave., New York, N. Y.

LENSES & ACCESSORIES



VISTASCOPE is now available for home-movie cameras, and is distributed by Vistascope Corp., 100 Central Park South, New York. The lens attaches to 8- and 16-mm movie cameras and projectors. On the camera it "squeezes" the view to get considerably wider subject matter on a given film. Placed on the projector lens it "unsqueezes" the compressed images and thus provides a wider picture, which is said to be superior in quality and definition to any professional 35-mm film yet developed. The 8-mm type costs $75 and the price of the 16-mm attachment is $125.

WESTAGON 50-mm, f/2-0 lens with fully automatic diaphragm is offered by Exakta Camera Co., 705 Bronx River Rd., Bronxville 8, N. Y. It is a 6-element lens specifically designed for Exakta Cameras, Model I, II, V, VX, and Automatic VX. In use, the diaphragm is preset and the camera focused at full aperture. Pressing the release button then closes the lens to the preselected aperture as the shutter is tripped. Price is $110 for standard model; for use with Automatic Exakta VX with waist-level finder it is $279.50. Available only from dealers.

500-MM TEWE TELEGON TELEPHOTO LENS for Exakta cameras has been added to the imports of Exakta Camera Co., 705 Bronx River Road, Bronxville 8, N. Y. The four-element lens is constructed according to Petzval calculations and is said to have high light intensity. Telegon stops down to *f*/22, has a maximum aperture of *f*/5, and focuses from 10 ft to infinity. Its mount is of ebony. Pictures may be taken from a vertical or horizontal position through use of a tripod-adapter thread mounted in a circular rotating mount. Price is $450, with immediate availability.

CINECESSORY KIT for 8-mm movie makers is announced by Elgeet Optical Co., 838 Smith St., Rochester, N. Y. The kit includes a 4x wide-angle attachment for the projector lens, an Elgeet 6.5-mm *f*/2.5 wide-angle camera lens, and a similar 1½-in. telephoto lens. Prices of camera lenses are, respectively, $39.95 and $46.95, and the attachment is included in the three-way Kit Box without extra charge. The offer expires March 14.

ELGEET OPTICAL CO., 838 Smith St., Rochester, N. Y., announces two new lens-accessory sets for 8-mm movie cameras. The first (illustrated) is for Bell & Howell 220 and 252 movie cameras. It consists of an Elgeet Cinematar telephoto attachment, a wide-angle attachment, and a wide-angle viewfinder. The second set, for Brownie movie cameras, includes the telephoto attachment, the wide-angle attachment, and a combination telephoto-wide-angle combination viewfinder. Price of either set is $38.80.

CONTAFLEX SUPPLEMENTARY LENSES now are made by Spiratone Inc., 49 W. 27th St., New York. Finished in satin chrome, they are coated and color-corrected and sold in a plush-lined leather case. They screw directly into the Contaflex lens and are interchangeable. Price of either telephoto or wide-angle attachment is $16.95 and the set costs $29.95. A second Spiratone product is E-EZUMAR enlarging lens of 2-in. focal length and *f*/3.5 maximum aperture. Price, with mounting flange, is $7.95.

PROJECTION & VIEWING EQUIPMENT

PRICE REDUCTIONS are announced by the Keystone Camera Co., Inc., Hallet Sq., Boston, Mass., through its complete line of 8- and 16-mm cameras and projectors.

SCHOOLMATE is a new multi-purpose slide and filmstrip projector offered by TDC division of Bell & Howell, 3512 N. Kostner Ave., Chicago. It is available in 300- and 500-watt models costing, respectively, $59.75 and $75. Both have an *f*/3.5 Trionar lens in helical focusing mount, Venturi-type blower cooling, and accept single- and double-frame filmstrips and 2 x 2 slides in any standard mount. A

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manual 2 x 2 slide changer is included, and the projector accepts the TDC Selectron-Semimatic slide changer ($12.50) with its Selectrays ($1.50).

REVERE "777" 8-MM MOVIE PROJECTOR is a new product of Revere Camera Co., 320 E. 21st St., Chicago 16, which has a single control effecting rapid change from forward projection to reverse, and a sliding control knob providing quick power rewind with safety feature. The lens is a ¾-in. f/1.6 and the light source is a 500-watt lamp, with 750-watt optional. Lifetime lubrication is a feature. Price of "777" is $127.50 with either lamp.

STEREO "50" VIEWER does away with the need for changing stereo slides one at a time. Up to 50 slides can be loaded at once. Turning a knob brings a new slide into view. This viewer plugs into any light socket and is claimed to eliminate constant focus changing. The price is $44.95 and more information is available from the Stereo "50" Viewer Corp., 946 Cahuenga Blvd., Hollywood, Calif.

SOUND PROJECTION EQUIPMENT

VIEWLEX VIEWTAPE is a tape recorder and playback unit introduced by Viewlex, Inc., 35-01 Queens Blvd., Long Island City 1, N. Y. Its compartmentized case accommodates any of the Viewlex 150, 300, or 500-watt projectors. The sound unit uses "A" tape on five-inch reels and has all recording accessories. It records on half of the tape, which is then reversed to utilize the other half, providing a full hour of recording. Prices, complete with projector, from $157 to $236.

MUSIC FESTIVAL is the name of a new table model tape recorder, a product of Bell & Howell Co., 7100 McCormick Rd., Chicago 45, Ill. It has a multiple speaker system: two "woofers" for low tones are placed on opposite sides of the unit while two "tweeters" for high tones are side by side behind the grille. Capstan, feed, and take-up reels have independent motors, claimed to eliminate wow and flutter. Some other features are new interlock push buttons to prevent accidental erasure or breaking of tape; drop-in threading; dual-speed operation; and a program indicator for instant location of any recording on the tape. Model 300-M (mahogany) is proced at $299.50, 300-B (blonde) at $314.50.

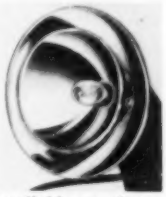
FLASH

FR CORP., 951 Brook Ave., New York 51, N. Y., announces an electronic flash unit for X-synch shutter cameras, with these features: operates on 4 flashlight batteries (450-v), 300 flashes per set; 5 to 10 sec interval between flashes; flash duration of 1/500 sec; 60 w-sec energy input; guide numbers of 50 for Kodachrome and 80-100 for new Ektachrome; and a coiled cord for off-camera flash. Complete with power pack (2½ lb), universal mounting bracket and cord, the price is $54.95.

POCKET FLASH unit for the Polaroid Highlander camera slips onto the flash shoe and has a built-in test light to warn of defective bulb, battery, or connection. Price of the standard model is $5.95; B-C model, including batteries is $8.95. Manufacturer is Camera Optics Corp., 101 W. 47th St., New York 36, N. Y.

SUPER CONTROLITE, a new electronic flash import from England, is distributed here by J. A. Maurer, Inc., 37-01 31st St., Long Island City 1, N. Y. It is powered by two 90-volt batteries and employs an SF 14 flashtube. Shape of the effectively plated reflector is said to eliminate hotspots; the trigger circuit is shockproof and other circuits waterproofed. Recharging time is less than two sec and the flash factor is 100 with HP3 roll film when extending the development 40 percent. Price is approximately $75.

GENERAL ELECTRIC, Nela Park, Cleveland 12, Ohio, announces that over 10 million M2 flashbulbs have been placed on the market in only eight months. Box camera users are assured of 100 percent success for black-and-white pictures, it is claimed, with even better results obtained on focusing-type cameras with F or X synchronization settings, with an exposure time of no less than 1/50 sec. Many flash units taking the M2 bulb are now on the market.



CAMERA OPTICS CORP., 101 W. 47th St., New York 36, N. Y., is the manufacturer of an adapter-reflector for maximum light transmission of the M-2 flashbulbs. This reflector unit slips into standard bayonet flash sockets, and contains its own bulb ejector. The price is $1.25 and it is available at photographic dealers or from the manufacturer.

CONNECTING CORD #67-1 for the Sawyer View-Master Personal stereo camera and Heiland electronic flash units is announced by Sawyer's Inc., Box 490, Portland 7, Ore. This 14-in. cord comes with a standard household plug on one end and a screw-type attachment on the other. Price is $2.

STROBO RESEARCH, Milwaukee, Wis., has been purchased by Graflex, Inc., Rochester, N. Y. Principal Strobo Research products are Stroboflash, Multistrob, and Teleflash units, plus power packs and other accessories. Strobo Research will be continued as a wholly owned subsidiary of Graflex.

MISCELLANEOUS

KODAK EKTACHROME, rated three times faster than Kodachrome film, is being produced in popular miniature camera sizes. Eastman Kodak Co., Rochester, N. Y., announces Daylight Type and Type F film in the 35-mm size (20 exp) and Bantam 828 (8 exp). Prices are, respectively, $1.85 and $1. Due to changes in manufacturing for these small sizes, Process E-2 Ektachrome Processing Chemicals must be used for developing the transparencies. Unsatisfactory results are obtained with the old processing chemicals.

ENTECO 85C FILTER, required for use with Type F Ektachrome film in daylight has been made, following the exact transmittance curve furnished by the film manufacturer. It does not replace the Type A (85) filter recommended for daylight exposure of Type A Kodachrome film. Prices, depending upon size, start at $1.50. Literature is available from Enteco Industries, Inc., 610 Kosciusko St., Brooklyn 21, N. Y.

EKTACHROME PROCESSING is announced by Pavelle Color, Inc., 533 W. 57th St., New York 19, N. Y. Processing prices are $1.25 for a 20-exp, 35-mm cartridge; and 95 cents for a roll of Bantam 828.

POSTAMATIC is a pocket postal scale, giving first-class and air-mail postage readings up to four ounces. It is handy when sending photos or proofs in the mail, saving time and money. A product of the Postamatic Co., Dept. 854, 1594 Belfield Ave., Philadelphia 41, Pa., it costs $1.

EASTMAN KODAK COMPANY announces price reductions—on the Brownie Holiday Camera, from $3.95 to $2.95, and on the Kodak Pony 135 Camera, Model B, from $34.75 to $29.75. The prices are list and include Federal tax.

MOUNTING SERVICE for purchasers of duplicate stereo pairs is announced by Eastman Kodak Company. Orders must be sent to Kodak in Rochester through a photo dealer. The complete cost for mounted pairs is 70 cents for less than fifty duplicates; in lots of fifty the price is 50 cents per pair. Prices of unmounted pairs are: less than fifty, 60 cents; fifty or more, 40 cents.

OMEGA D-2 ENLARGER is introduced in a modernized version. Simmon Bros., Inc., 30-28 Starr Ave., Long Island City 1, N. Y., announce increased strength and rigidity in their product to make it withstand greater vibration without endangering sharpness; a gearless friction-type focusing mechanism for finger-tip control; a hand wheel with rack-and-pinion movement for quick and smooth adjustments on any size print; an 18-diameter baseboard; enlargements from negatives up to 4x5; interchangeable double condensers matched to lenses, which are interchangeable in focal lengths of 2 to 6¾ in.; and a ventilated lamphouse for low negative temperature. An Omegalite attachment converts it to a diffusion enlarger. Prices start at $164.50. Additional information available from the manufacturer.

STARR LENS CLEANING KIT now comes in a plastic carrying case. Designed for use with coated lenses, it contains a camel's hair brush in a lipstick case and 50 sheets of lens gauze. A product of Starr Corp., 49 W. 19th St., New York, N. Y., it is sold at camera stores for $1.

ZIRCONIUM ARC LAMP and Power Supplies offers intense, yet cool lighting for photomicroscopy and other uses. A 2-watt power supply includes a 0.003-in. Zirconium concentrated arc-lamp, giving 46,000 foot candles per sq. in. and a line cord and a socket. The price is $39.95. Burton Mfg. Co., 11201 W. Pico Blvd., Los Angeles 64, Calif., offers a free brochure on this system, listing accessories and other units.

DITTO CAMERA STOCK for the Ditto 99 rapid sequence, 35-mm camera does not use a cable release to trip the shutter. This is accomplished by means of a lever device which presses against the shutter release button on the camera body. Ditto Camera Corp., 527 Fifth Ave., New York 17, N. Y., claims this system to be exceptionally smooth and efficient, enabling the photographer to take 12 pictures on one winding of the Ditto 99. A nose and a shoulder rest combine for rock-steady support. The price is $18.50.

COLOR DUPLICATIONS in stereo, 35-mm slides, and filmstrips are announced by Bebell and Bebell Color Labs., Amateur Services Div., 108 W. 24th St., New York, N. Y. They also feature enlargements of cropped transparencies and filmstrips made from individual slides, with the inclusion of text and drawings, if supplied. Duplicates are 50 cents for 35-mm, 80 cents for stereo pairs, both in cardboard mounts. At a slight increase in price, they may be returned mounted between glass. Price list of the service is available.

DIAFIX 35 is a strip contact printer for 35-mm film. A manually operated gear moves perforated printing paper from a closed metal cassette along with the negative filmstrip into position on a metal channel. Exposure is then made in a darkroom under an enlarger light. Masks for 35-mm and smaller size negatives are included. Distributed by Burke & James, Inc., 121 S. Wabash Ave., Chicago 4, Ill., the price is $21.

BROOKSMOUNT stereo mounts, designed for projection mounting, come in distant, medium, and close-up spacing and are made so that each pair can be correctly aligned horizontally. Accurate vertical alignment is horizontal. The manufacturer also states that stereos can be mounted so that no projector adjustment is necessary. Die cut from durable black paper, they can be used as paper mounts or between glass with tape or metal frames. A package of 100 frames in all three assortments plus labels is priced at $3; a deluxe package including a Duo-Slide File is $3.50. More information and samples available from Brooks Mfg. Co., 1514 Astor Pl., Cincinnati 24, Ohio.

PHOTO-FACT FINDER, a dial guide, controls contrast in black-and-white photographs when used in conjunction with an exposure meter. A product of Fact-Finder Pub., 470 Midvale Ave., Los Angeles 24, Cal., the price is $1.—

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THE NEW 1955 FULLY AUTOMATIC EXAKTA VX

"The Most Versatile Camera in the World."

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- Improved Film Advance
- New Exposure Counter
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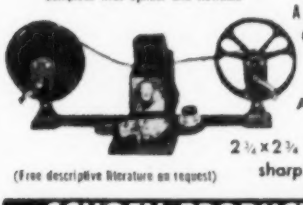

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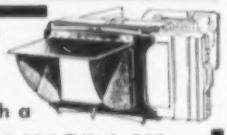

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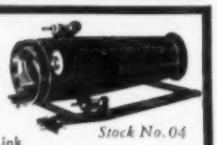

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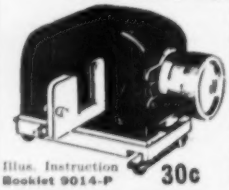

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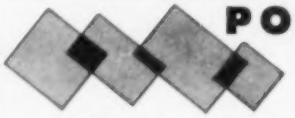

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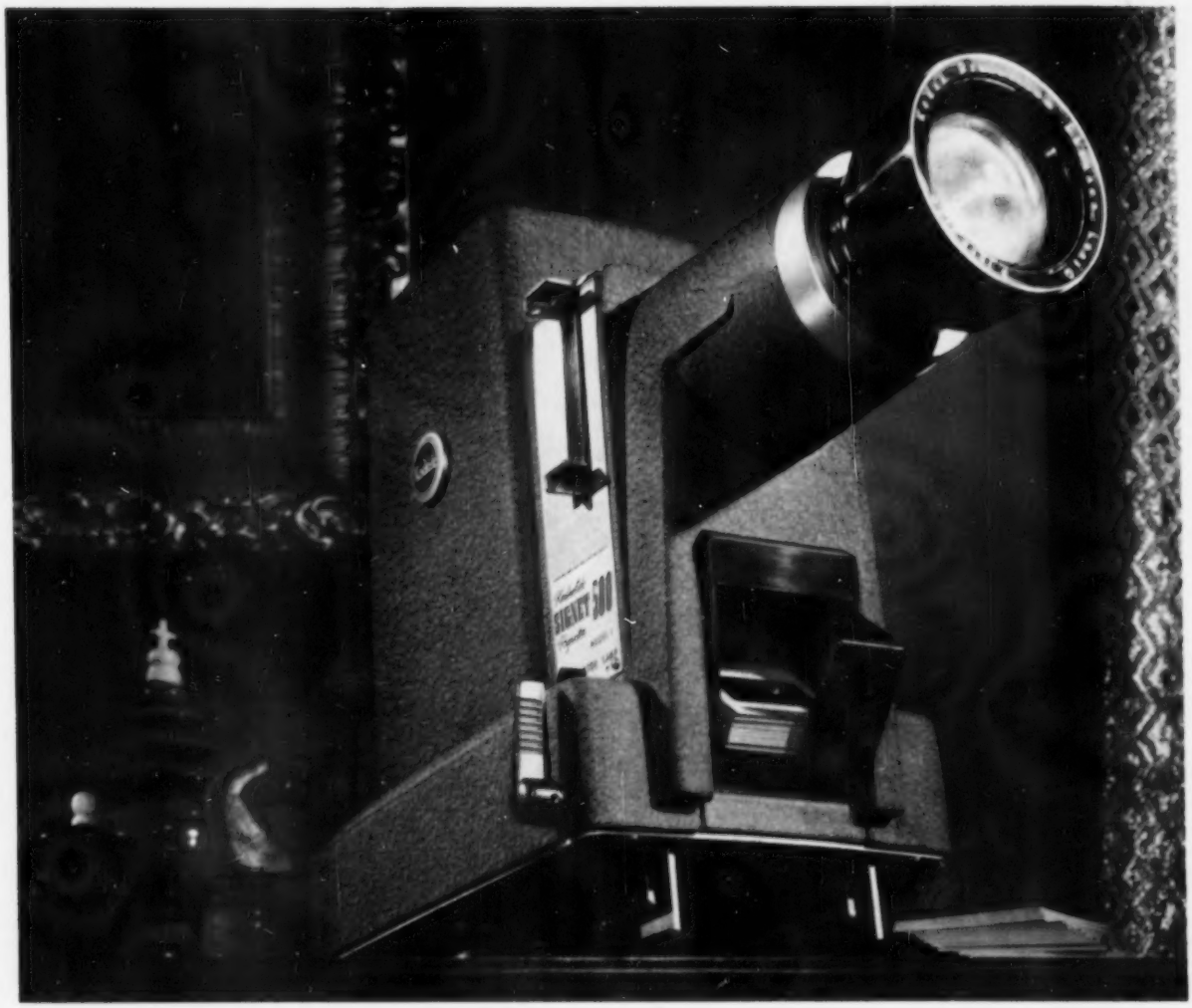

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